

CITY WIDE STUDIES

PART III

PROGRAMMING PUBLIC IMPROVEMENTS



CITY OF NEW YORK

1934-1938

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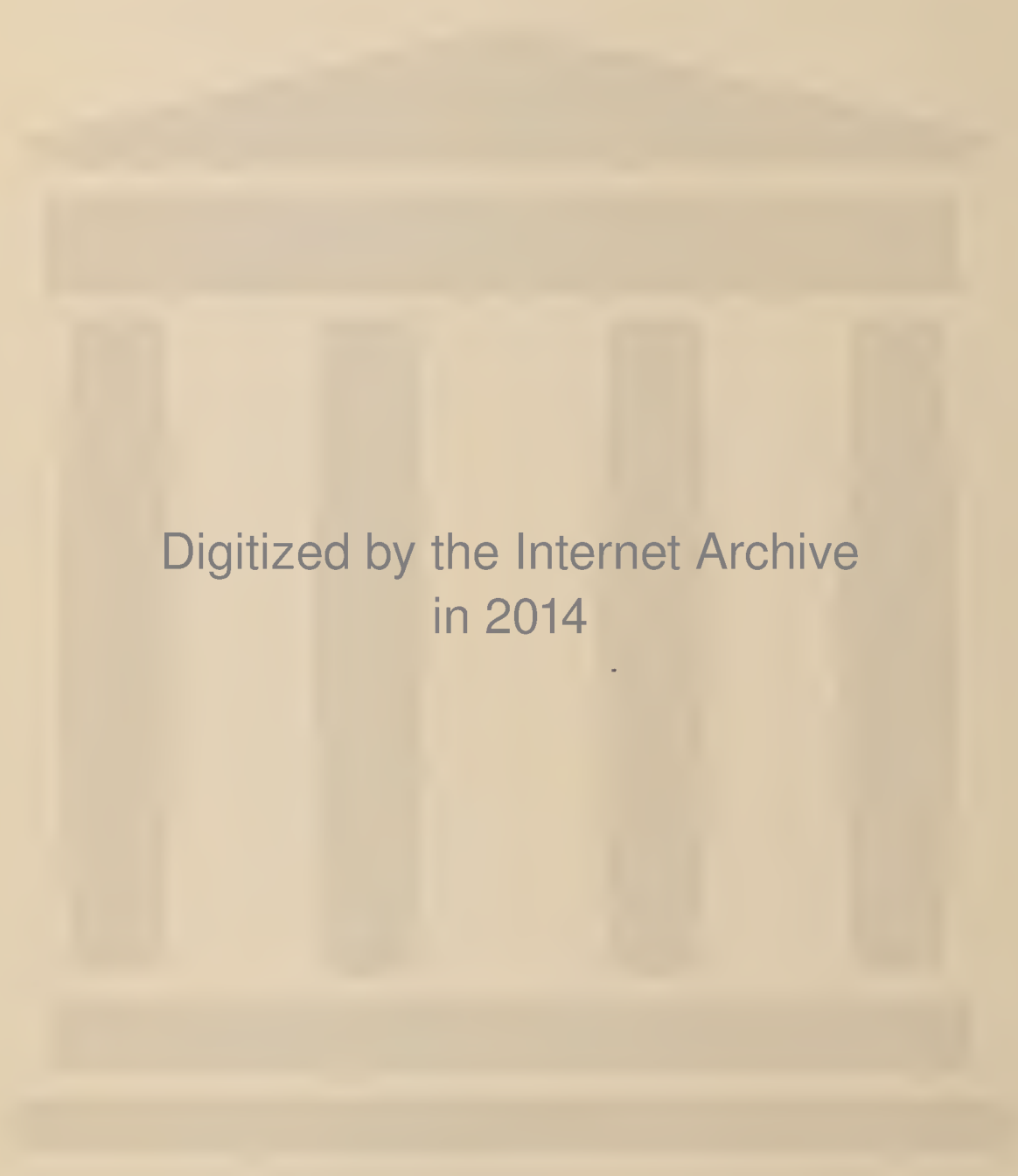


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CITY-WIDE STUDIES
PART III
PROGRAMMING
PUBLIC IMPROVEMENTS
IN THE CITY OF NEW YORK



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MAYOR'S COMMITTEE ON CITY PLANNING
of the City of New York
1940

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¹ Deceased 1935; as President of the then Board of Aldermen, Timothy J. Sullivan served as Chairman for the year 1936 and was succeeded by William F. Brunner, who served as Chairman of the Mayor's Committee on City Planning and President of the Board of Aldermen during 1937.

² Deceased.

³ Succeeded John F. Galvin, deceased July 1936.

CITY-WIDE STUDIES — PART III
PROGRAMMING PUBLIC IMPROVEMENTS
IN THE CITY OF NEW YORK

FOREWORD

The reports published herein belong to a series, prepared for the Mayor's Committee on City Planning of the City of New York, covering studies made during the years 1934-1938 with the aid of the United States Work Projects Administration Project Number 465-97-3-96.

For a general statement of the purpose and methods of these studies the reader is referred to the Preface to Part I of these City-Wide Studies.

The entire series reports upon one of the few recorded efforts to conduct comprehensive city planning studies in this country. Part I, "Basic Factors in the Planning of the City of New York", includes population, industrial and residential areas, and zoning reports. Part II, "The Planning of Public Services for the City of New York", considers those public services that must be studied in the planning of the city and in the programming of city expenditures for permanent improvements. This part includes studies undertaken to ascertain the city's ability to finance permanent improvements in the future, and to formulate a long-term outlay program for needed public works within the financial resources indicated.

Purpose

At its inception in 1934, the staff of the Mayor's Committee on City Planning was directed, among other things, to lay the groundwork for a master plan through the relevant city-wide studies, and to consider municipal finances in connection with the public works planning. Provisions of the present Charter, which was adopted in 1936 and became effective January 1, 1938, gave especial emphasis in these studies to a long-term program of permanent improvements that would provide for the city's indicated future development.

The Charter established a City Planning Commission to advise and report upon all matters affecting the growth of the city. In addition to custody of the city map, review of water front and drainage plans, and zoning duties, the Commission is responsible for the preparation and modification to meet changing conditions of a master plan embracing a long-range program for the improvement of the city. The Commission also prepares an annual capital budget and a 5-year capital program that together schedule capital expenditures for six years.

Upon approval by the Board of Estimate and the City Council, and certification by the Mayor, the capital budget controls capital expenditures for the ensuing year; but the Charter makes provision for amendment of the capital budget in case of emergencies. The Charter requires that all assessable improvements costing more than \$10,000 must be considered by the City Planning Commission prior to final authorization by the Board of Estimate.

No improvements may be included in the annual capital budget contrary to the recommendations of the City Planning Commission, and no assessable improvement may be initiated when disapproved by the Commission except by a three-fourths affirmative vote of the Board of Estimate. The Charter also made a number of important changes in the fiscal operations of the city, which were considered insofar as applicable to these studies. Specific provisions that have a bearing on these investigations are discussed in the several sections of this report.

In anticipation of the fiscal responsibility placed upon the City Planning Commission by the Charter, the city-wide studies of the Mayor's Committee on City Planning were designed not only to determine the current deficiencies and future physical needs of the city, but also to relate an outlay program for needed municipal facilities to the city's ability to pay for such improvements.

Method

In order to correspond with the capital program period set up in the Charter, these fiscal studies were divided into three 6-year periods, the first covering the years 1939-1944 inclusive, the second the years 1945 through 1950, and the third period the years 1951-1956 inclusive. The study entitled "Financing Permanent Improvements" attempted to ascertain the amount of expenditures that the city could finance during each of the three 6-year periods. The program study was concerned with the scheduling of expenditures, according to the relative urgency of desirable improvements, so that the resulting programs would be within the city's indicated financial resources.

The original report on the finance study was completed in February 1938; the program study report was drafted in July 1938. Changing conditions, the new Administrative Code, new laws and State Constitutional Amendments have subsequently modified some of the bases upon which these studies were predicated. The more important changes are indicated by footnotes in the text. In editing the original manuscripts for publication, it was impracticable to undertake the revisions necessary to bring the studies up-to-date. It is believed, however, that the findings presented in this volume represent a useful approach to the city's problems.

Acknowledgments

General acknowledgments are included in the Preface to Part I of the City-Wide Studies written by Mr. Lawrence M. Orton, who was Secretary of the Mayor's Committee on City Planning. In view of the exacting nature of the work and the extensive research involved, I regret that it is not possible to mention each individual who contributed to these fiscal investigations. I am especially glad to express my appreciation to Mr. Frank J. Klopff, Project Engineer, to whom a large measure of credit is due for the effective organization and supervision of the staff; to Mr. Ahlin Kingston, Supervisor of City-Wide Studies; to Mr. Grant R. Wells, who was in immediate charge of the group which collected data and made necessary calculations for the finance study; and to the other members of the project staff who assisted in these investigations.

Grateful acknowledgment is made to the Work Projects Administration, without whose material resources and cooperation these studies could not have been undertaken; to the Board of Education of the City of New York, in the reproduction of this report; to the Spelman Fund of New York and the Regional Plan Association for ensuring skilled direction for the work; and to the several public agencies that made essential information available to the staff.

Finally, I wish personally to acknowledge the cooperation and aid of the Department of City Planning in the publication of this material.

F. DODD McHUGH,
Technical Director

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Financing Permanent Improvements

INTRODUCTION

The Financial Study attempted to ascertain the extent of the city's financial resources and to establish a framework for considering a long-term program of expenditures for permanent improvements.

New York City's finances are necessarily complex, but all elements of this study fall under one of four major headings: Income, Outgo, Capital Outlay and Assessable Improvements. The basic information was obtained from official sources. As with its other planning studies, the staff has been fortunate in having expert advice in these financial investigations.

The Income Study included analyses of past receipts from the real estate tax levy, revenue from taxes other than real estate, and receipts from "other" sources; and, forecasts of the probable future revenue from these sources.

The Outgo Study examined past budgetary appropriations for operation and maintenance, and other appropriations required by law. Future expenditures for these purposes, as well as for debt service charges, were predicted in order to obtain the balance of income available to finance new capital outlays.

The Capital Outlay Study determined future borrowing power and the amounts of capital expenditure that could be financed by the funds available. On the basis of these conclusions, a suggested program for capital outlay covering three 6-year periods was formulated. Recommendations as to the scheduling of specific improvements, in the order of urgency, are discussed in the report "Program for Permanent Improvements."

The Assessable Improvement Study included investigations into assessment bonds, assessments confirmed, and expenditures from the street and park openings fund and the street improvement fund. In accordance with the findings, future expenditures for assessable improvements were forecast.

Charter Requirements

The city's fiscal year has formerly coincided with the calendar year, but under the new Charter the fiscal year will run from July 1 to June 30, commencing in 1939. The capital budget, however, will control expenditures during the calendar year. The estimates, tabulations and forecasts

made in the finance study are in accordance with this change.

Section 211 of the Charter defines *capital project* as: "(a) any physical public betterment or improvement or any preliminary studies and surveys relative thereto; (b) the acquisition of property of a permanent nature; (c) the purchase of equipment for any public betterment or improvement when first erected or acquired. It shall not include any public betterment or improvement, the acquisition of any real property or the purchase of any equipment, any part of the total cost and expenses of which shall be paid out of the proceeds of assessments, nor the repavement of any street, avenue, highway or public place."

Because of these limitations, the capital outlay section of this study was concerned with the financing of permanent improvements by corporate stock, serial bonds and tax notes. The section on Assessable Improvements included considerations of the financing of permanent improvements by special assessments.

It was necessary to relate the costs of capital outlays included in the capital budget, to the fiscal year of the expense budget. In order to keep the study as simple as possible, capital outlays suggested for each calendar year were assumed to be the actual amounts that would be expended during each capital budget period. As a result, the new bonds that would be issued to finance such outlays were assumed to be outstanding at the beginning of the fiscal year next succeeding the capital budget year. On this basis service charges for new bonds and tax notes issued during each capital budget year were included in the expense budget of the fiscal year next succeeding; i. e., that commences six months after the end of each capital budget year. As an illustration of this method, the outlays suggested in the capital budget for the calendar year 1939 were assumed to be outstanding debt as of July 1, 1940, and service charges on this new debt were included in the expense budget running from July 1, 1940 to June 30, 1941.

Other provisions of the new Charter which have a bearing on financial matters are discussed in the several sections of this report.

Qualifications

This type of study is necessarily provisional; it investigates the effects of certain fiscal operations

under specific conditions, and is obviously subject to qualifications. For example, one may alter any of the basic assumptions, employ a new set of factors, and produce different results.

This study was guided by facts, analyses of past and current trends, and by reasonable assumptions as to the effects of the new charter. Every estimate and forecast was made a function of population; predictions were based upon per capita curve extensions to indicate probable normal conditions. While changes in municipal, state and federal fiscal policies, as well as shifts in national or international economic conditions, will alter the predicted amounts of revenue and costs of operation, it seems probable that the operations indicated by these analyses will approximate the actual averages over a period of years.

Inasmuch as this is an exploratory study its full value will be realized only if it is kept up-to-date by revisions from time to time. It is to be hoped

that the new City Planning Commission will find it practicable to arrange for such continuing modifications.

Omissions

Upon the assumption that any future expenditures that may be required for relief of unemployment will be met as at present by "emergency" taxes, these items were excluded from both the Income and Outgo studies. Since special assessments are paid into revolving funds to finance assessable improvements, they were also excluded from the Income and Outgo studies.

Further gaps were due to the limitations of time and resources. Among other things, it was not possible to determine the proportion of suggested new debt that would be within the legal limit, nor to analyze the workings of the sinking funds, capital accrual fund, and the real property fund.

Income

The study of Income includes revenues received by the city from real estate taxes, special taxes, state and federal aid, and "other" miscellaneous sources, but excludes emergency taxes for relief, WPA and PWA funds, special assessments and borrowing.

REAL ESTATE TAX LEVY

The real estate tax levy, comprised of taxes from real estate and special franchises, presented a difficult problem of forecasting, which was simplified to some extent by considering each element separately; i. e., the assessed value of real estate, the assessed value of special franchises, aggregate assessed value, and tax rates.

Assessed Value of Real Estate

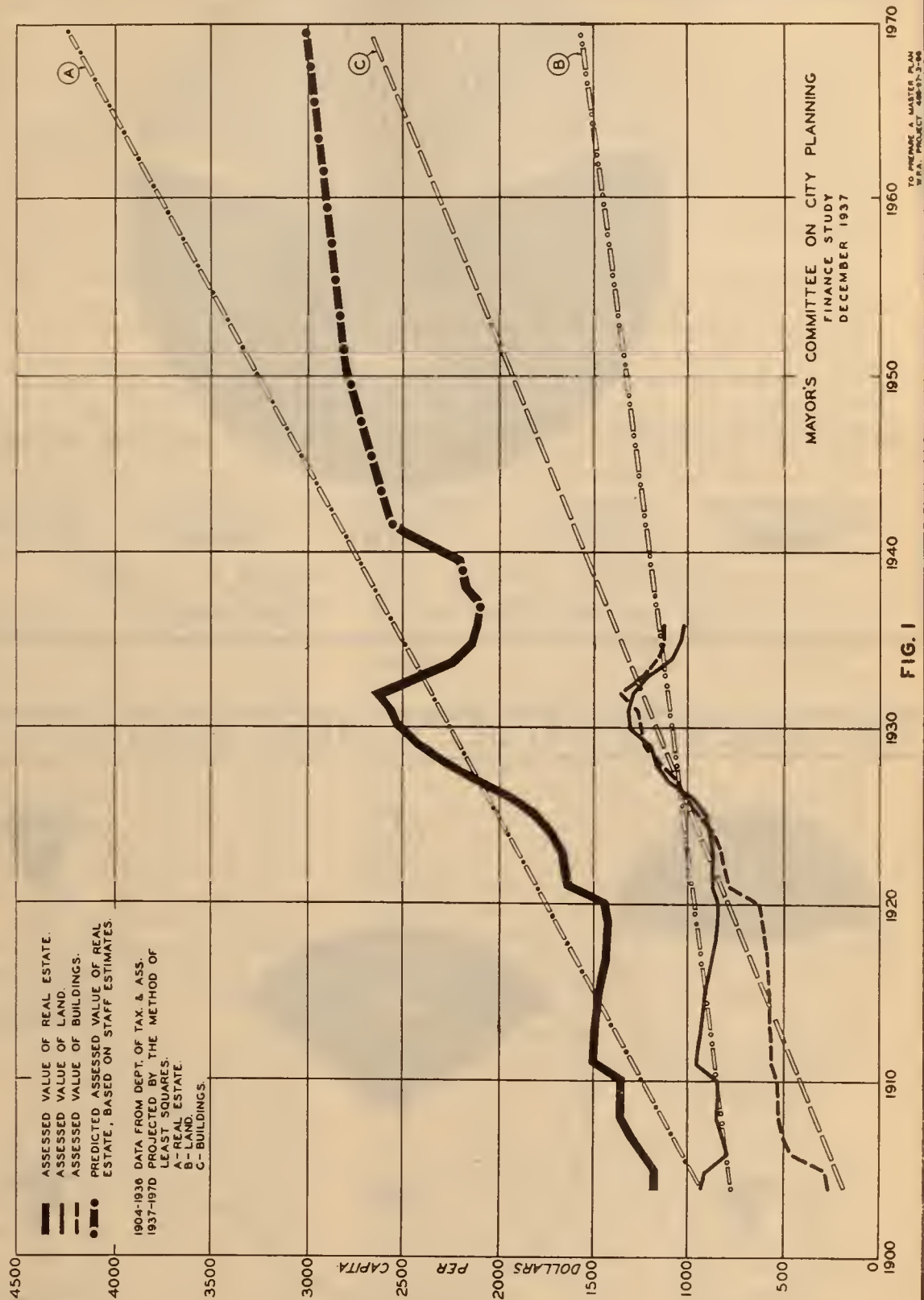
The assessed value of taxable real estate (land and buildings) increased from \$1,200 per capita in 1904 to about \$2,650 in 1932, but thereafter declined to \$2,100 by 1936. The behavior of per capita assessed values, Figure 1, is particularly interesting. While land values fluctuated between \$800 and \$1,000 per capita (ignoring the rise of the late 1920's, most of which was lost during the depression), the assessed value of buildings per capita jumped from about one-third of land value in 1904, to equal land value in 1925. Since 1925 the per capita assessed values of land and of buildings have been approximately equal, although building values were slightly higher by 1936.

If the method of "least squares" is employed in projecting these curves assessed land value reaches almost \$1,600, and assessed value of buildings exceeds \$2,600 per capita by 1970. The sum of these two curves, shown as "A" on the chart, equals the assessed value of real estate, and is nearly \$4,250 per capita by 1970. This method of extension was considered unsatisfactory inasmuch as future real estate values will unquestionably be affected by the expected deceleration of population growth in New York City.

Figures 2 and 3 show how taxable values were distributed between the five boroughs, and between residential and non-residential property in 1935 and 1934, respectively. Manhattan, with only 7 percent of the city area had 57.1 percent of the land value and 51 percent of the total taxable value. Residential value (land and buildings) accounted for 85 to 92 percent of the total in all boroughs except Manhattan, where the concentration of business is so great that under 55 percent represented the assessed value of residential properties. Of the total assessed value in 1934, only 30.1 percent was accounted for by non-residential areas.

Since 70 percent of 1934 real estate values were found in residential areas it was decided that a detailed analysis of the 1934 Real Property Inventory rental data should be utilized to establish a basis for forecasting values. Accordingly, a method was developed for capitalizing rental income to obtain the "real" value of residential properties in

PER CAPITA ASSESSED VALUES OF TAXABLE REAL ESTATE NEW YORK CITY



1935-ASSESSED VALUE OF TAXABLE LAND

MAYOR'S COMMITTEE

ON CITY PLANNING

DATA FROM DEPARTMENT

OF TAXES & ASSESSMENTS

MANHATTAN

BRONX

BROOKLYN

QUEENS

RICHMOND

ASSESSED VALUE OF TAXABLE LAND
IN NEW YORK CITY \$7,660,198,156



W.P.A. PROJ. 65-97-319X-APRIL 1, 1936

FIG. 2

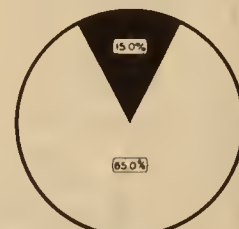
1934 ASSESSED VALUE OF REAL ESTATE IN N.Y.C.



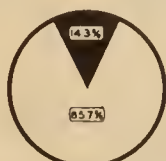
MANHATTAN
TOTAL VALUE-\$16,391,265,272



RICHMOND
TOTAL VALUE-\$292,453,565



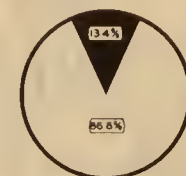
BROOKLYN
TOTAL VALUE-\$3,638,685,690



THE BRONX
TOTAL VALUE-\$1,832,208,241



GREATER NEW YORK
GRAND TOTAL VALUE-\$16,457,169,768



QUEENS
TOTAL VALUE-\$2,102,358,980



RESIDENTIAL



NON-RESIDENTIAL

ASSESSED VALUE OF PREDOMINANT RESIDENTIAL
AND NON-RESIDENTIAL AREAS AS DETERMINED BY
MAYOR'S COMMITTEE ON CITY PLANNING
BASED ON DATA FROM THE DEPARTMENT OF TAXES AND ASSESSMENTS.

JUNE 1936

FIG. 3

W.P.A. PROJ. 65-97-318X-17087

each planning study area, and for determining the "full" value of non-residential properties. ⁽¹⁾

Rental as an Index of Value—The income basis of determining value has recognized merit; it is used with variations in Great Britain and other European countries to fix assessed values; it was employed by the Home Owners' Loan Corporation as an aid in making appraisals; and the courts have commonly used it as an important element entering into the fixing of assessed valuations in this country. While the capitalizing of gross rents has some practical disadvantages, the method embodies a long-range investment rather than a speculative viewpoint, and was therefore considered to be particularly suited to this study.

The capitalization rates, determined after careful investigation of pertinent factors, would result in a fair return to the owner after providing for taxes, maintenance, interest, amortization of investment and other charges. For example, the 1934 rates—14 percent for residential properties and 13 percent for stores in residential areas—would produce a fair return, after taking care of fixed charges, under 1934 conditions.

Since there were no data available on rental income received in 1934 from non-residential properties, it was necessary to use a different method for determining the full value of non-residential areas. Under state law, the New York City Department of Taxes and Assessments is required to assess real estate at its full value. The 1934 assessed value of improved properties in non-residential areas was assumed to represent the full value of all real estate in such areas; just as the capitalization of rentals implied that the "real" value of residential areas included the value of vacant land in these areas. For this reason the assessed value of vacant land—which ordinarily produces no income and is to some extent assessed on the basis of reasonable *potential* earning capacity or sales value—was deducted from the assessed value of non-residential areas.

It is a fact that many properties were sold at less than assessed value during the depression years, but these sales were few in number compared to the total number of properties. Assuming that many of these transactions were under economic duress and hence did not represent an exchange between a willing buyer and a willing seller, they would not reflect the true value of the great mass

of income producing real estate that did not change hands.

"Real" Value of Residential Areas—Utilizing the reported monthly rentals for occupied family quarters, annual rent income was calculated for each residential area. The Real Property Inventory reported only rentals from residential structures, but a recent survey indicates a relationship between store and dwelling rentals, and between the number of occupied stores and occupied family quarters in residential areas of the lower East Side of Manhattan. ⁽²⁾

Covering 97 blocks and about 27,000 apartments, this survey disclosed that 81.1 percent of total monthly rental income was obtained from apartments and 18.9 percent from stores; 24.4 percent of all apartments were vacant and 24.3 percent of total stores were unoccupied. The 1930 federal census as well as other surveys, including studies of local neighborhoods of New York City, reveal a direct relationship between the number of occupied stores and the population served, or occupied family quarters. Assuming that a definite relationship will obtain in the case of rentals, and using these reported ratios, the 1934 rental income from stores was computed for each residential area. Residential and store rental incomes were then capitalized at rates of 14 and 13 percent, respectively, to obtain the 1934 "real" value of dwellings and stores in residential areas.

In addition to dwellings and stores, a relatively minor number of non-residential properties are usually located in residential areas. Each residential area is characterized by the predominant monthly rent and type of dwelling. An investigation disclosed that excluding stores, 1934 assessed values of these non-residential properties, expressed as a square foot function, were fairly constant for each rent and type of residential area. With the appropriate square foot value for each combination of rent and type, the assessed value of non-residential properties was calculated for each residential area, and assumed to equal "true" value. The "real" value of dwellings and stores was then added to the "true" value of non-residential properties to obtain the 1934 "real" value of each residential area.

"Full" Value of Real Estate—In a detailed survey of non-residential areas the staff had already tabulated the 1934 assessed value of all taxable properties. Since the assessed value of improved properties was regarded as synonymous with the full value of non-residential areas, it was merely

(1) For a description of the planning study areas see the report on "Residential Areas" in *Basic Factors in the Planning of the City of New York*, Part I of the City-Wide Studies.

(2) This survey is contained in the 1932 Report of the New York State Board of Housing.

necessary to subtract the assessed value of vacant land from these tabulations to obtain the "true" value of non-residential areas.

The 1934 "full" value of real estate, obtained by adding together the "real" values of residential areas and the "true" value of non-residential areas, totaled more than 18 billions. The 1934 assessed value of all taxable real estate was 91.1 percent of this "full" value. This ratio of assessed to "full" value was only $\frac{1}{2}$ of one percent higher than the weighted average of borough equalization rates employed by the State Tax Commission for 1934. No rate is given for the entire city—hence the weighted average. Inasmuch as the State Finance Department fixes equalization rates annually for purposes of allotting state funds to cities, the near coincidence of these two ratios was believed to indicate that the 1934 "full" value would furnish a reasonable basis for forecasting values.

Future "Full" Values of Real Estate—The prediction of future taxable real estate values involved: (1) Estimates and capitalization of probable residential rental income; (2) determination of store and other non-residential values in residential areas; and (3) forecasting values for non-residential areas.

A projection of the U. S. Bureau of Labor Statistics "rent index" for New York City, and the staff population and average size of family estimates were used to calculate future residential rents. The rent index from 1926 to 1936 is shown by Figure 4;

Utilizing the predicted rent index, population and size of family for each year—and with the 1934 residential "real" value, rent index, population and family size as foundations—residential rental income was estimated and capitalized at 15 percent (a rate more representative of average conditions than was used for 1934) to obtain the "real" value of residential properties. The "real" value of stores and the "true" value of other non-residential properties in residential areas were calculated on the supposition that, in any given year, they will bear the same proportion to residential "real" value for that year as their 1934 value bore to 1934 residential "real" value.

The "true" value of non-residential areas was calculated on the hypothesis that Manhattan's value for any year will increase over its 1934 value by the same ratio as the city's estimated population for such year increases over the 1934 figure; and, that in the case of the other boroughs, the value for a particular year will increase over its 1934 value as the ratio of the borough's estimated population for such year increases over the 1934 borough population.

The "full" value of taxable real estate was then derived from these calculations for each year, but it was necessary to translate "full" value into assessed value. Table 1 contains a comparison of real estate valuations as fixed by the city for 1934-1937, and the estimated "full" values. The annual trend from 1930 to 1937 is graphically indicated

TABLE 1
"Full" Value and Assessed Value
(Figures in Millions of Dollars)

Year	"Full" Value	Assessed Value	Ratio of Assessed to Full Value
1934	18,068	16,457	91.1%
1935	18,129	15,952	88.0%
1936	18,340	15,983	87.3%
1937	18,556	15,892	85.6%

from just over 100 in 1930, the index dropped to 77 in 1934, and continued downward to less than 75 percent of normal in 1936. The extension of this curve—which has to date coincided with subsequent reports from the Department of Labor—predicts a return to "normal" by 1942 and a continuance at this level thereafter. ⁽³⁾

(3) The staff extension of the rent index curve was substantiated by Bureau of Labor statistics report through 1937. The increases predicted for 1938 and 1939 were, however, over optimistic; the reported index was less than 80 at the close of 1939.

in Figure 5. The results of this analysis suggested that during periods of unusual prosperity, real estate values generally increase faster than assessed values, and inversely, in periods of depression when real estate values are apt to decline rapidly, assessed valuations may be expected to decrease at a slower rate.

Before projecting this ratio curve, many factors were considered, including the requirements of State Law that real estate be assessed at full value, and the likelihood that with population ap-

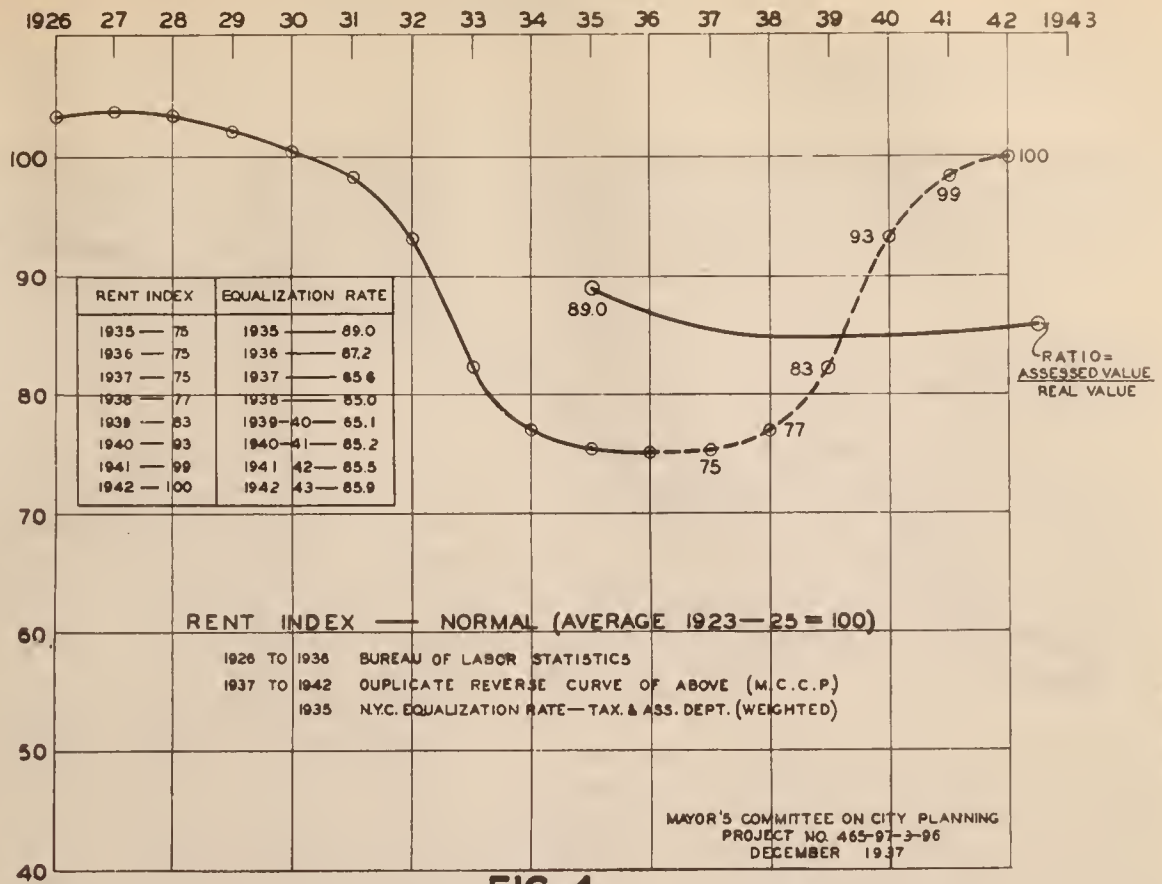
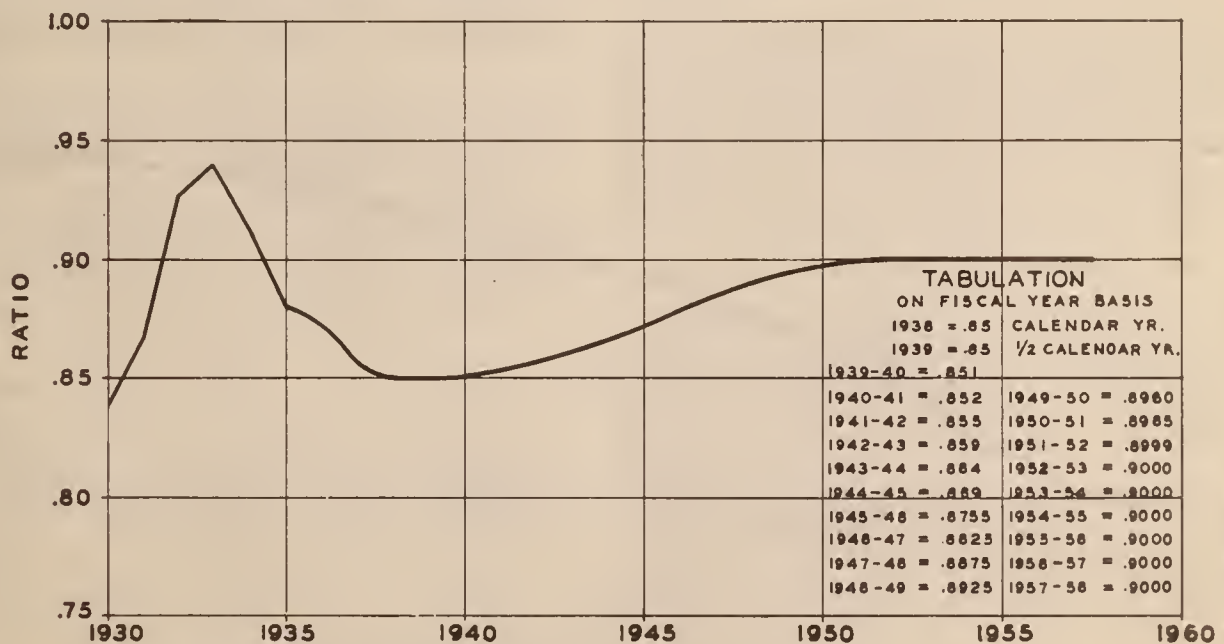


FIG. 4

REVISED B7-1a

RATIO OF ASSESSED VALUE OF REAL ESTATE TO M.C.C.P. "REAL VALUE"



DATA 1930-1937 FROM N.Y. STATE TAX BULLETINS
 DATA 1938-1958 M.C.C.P. ESTIMATE

DECEMBER 1937.

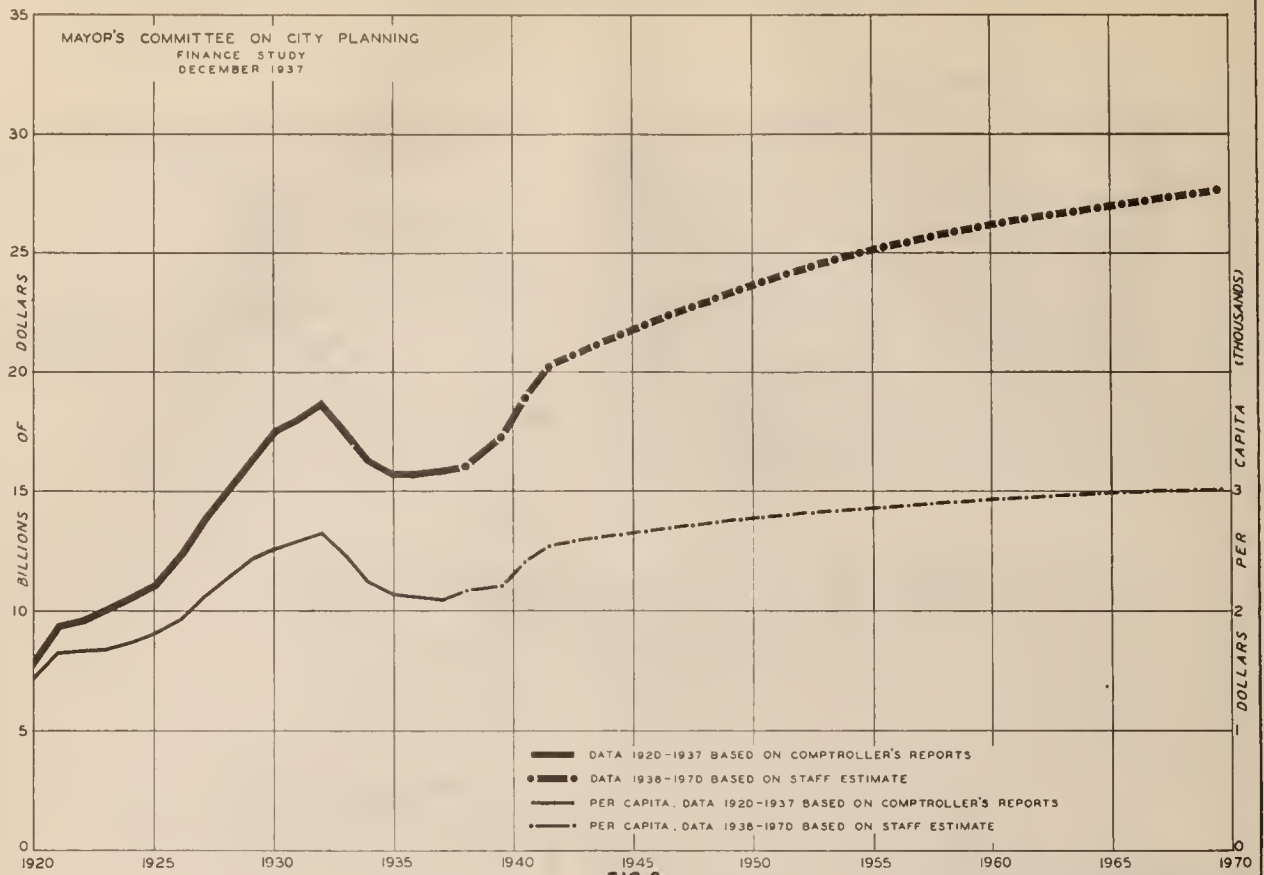
FIG. 5

MAYOR'S COMMITTEE ON CITY PLANNING
 PROJECT NO. 485-97-3-96
 (OLO 8037)

REVISED -- B7-55

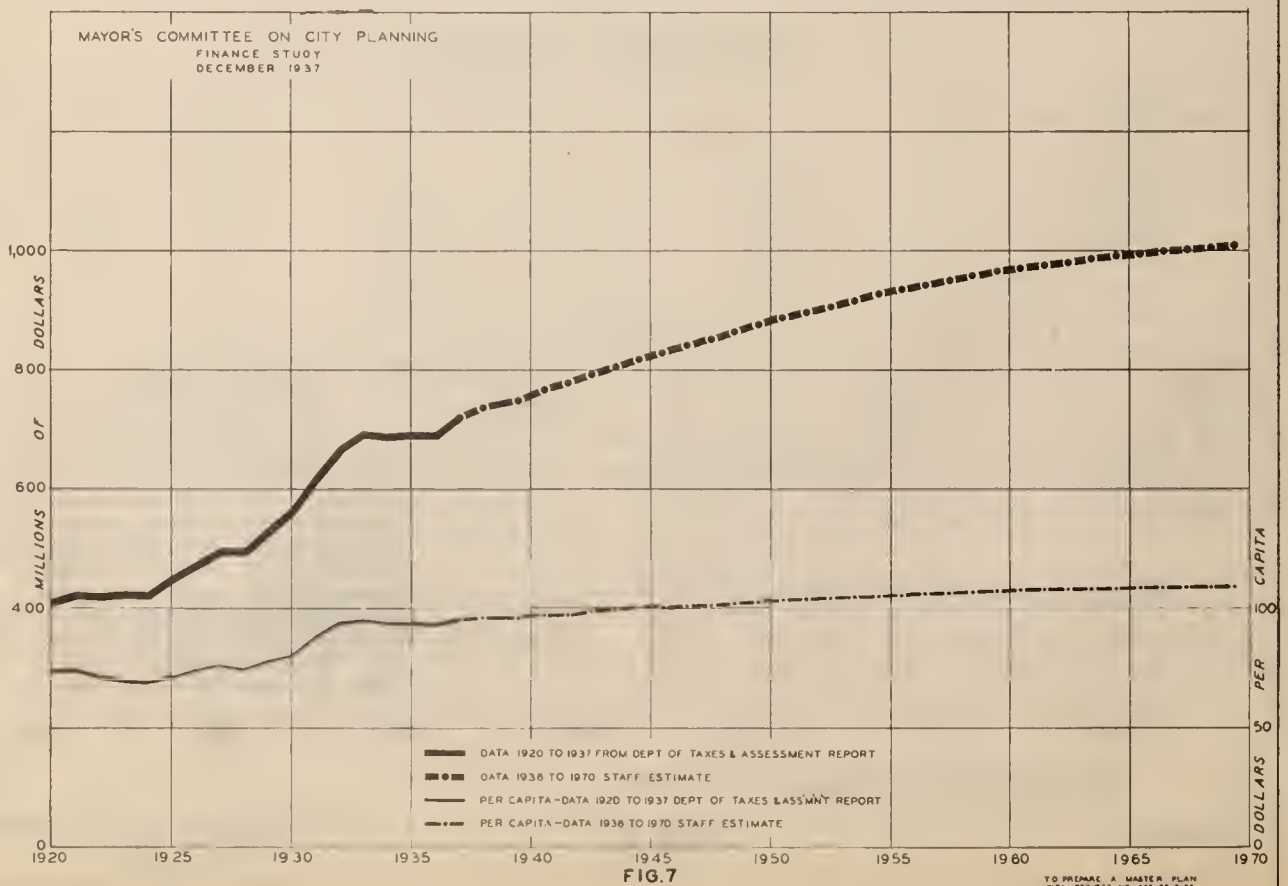
ASSESSED VALUE OF REAL ESTATE

EXCLUSIVE OF SPECIAL FRANCHISES
NEW YORK CITY



ASSESSED VALUE OF SPECIAL FRANCHISES

NEW YORK CITY



proaching stabilization, values will probably be subject to less fluctuation in the future, which would permit the fixing of assessed valuations nearer to "full" value. It was recognized, however, that a conservative allowance should be made between assessed and "full" value; consequently, the curve ascends from 85 in 1938 to 90 during the year 1952, and remains at this ratio thereafter. Figure 5.

Future assessed values of taxable real estate for each fiscal year were determined from "full" values and the predicted ratio of assessed to "real" value. Figure 6 indicates the results; total assessed values rise from 16.28 billion in 1938, to 25.76 billion by July 1957, and reach 27.94 billion by 1970. The per capita figures are also indicated by Figure 6, but a reference to Figure 1 will reveal that this study produced a smaller value per capita than the "least" square method of curved projection, and that in comparison, the staff estimate shows a decided *deceleration* in predicted per capita increases.

Assessed Value of Special Franchises

Assessed values of special franchises—which total less than 5 percent of real estate assessed valuations—were studied as a per capita phenomenon from 1900 to 1935. While the city's population increased nearly 40 percent from 1900 to 1910, assessed values of special franchises rose from \$64 per capita to \$97; during the subsequent decennium the city continued to grow, but special franchise values declined to \$75 in 1920; by 1935, however, they had again ascended, to \$94 per capita. It was assumed that a further modest increase in assessed values will result from the extension of franchise privileges due to estimated population growth, and probably to new inventions.

Consideration was given to the thirty-five year trend in forecasting per capita values, but it was believed that a curve reaching a tangent of \$110 by 1970, represented a conservative prediction. Figure 7 shows the per capita values, from which total assessed values were estimated. On this basis special franchises rise from 742.7 million in 1938, to 956.8 million in the fiscal year 1957-58, and to more than one billion by 1970.

Aggregate Assessed Value

The assessed value of taxable real estate and of special franchises combine to produce the aggregate assessed value of real estate.⁽⁴⁾ Figure 8 indicates past values, and the predicted aggregate assessed

(4) The estimates of assessed value have so far proven to be optimistic. See "1938 Final Valuations as related to this study" in the *Outgo* section of this report.

values resulting from the combination of real estate and special franchise valuations. From 17.02 billion in 1938, aggregate values are expected to reach 26.7 billion in the fiscal year 1957-58, and 28.9 billion by 1970.

Real Estate Tax Rates

Inasmuch as revenue from special assessments was excluded, this study considered past trends of the basic tax rate rather than the actual rates in the several boroughs. The effect of annual budgetary requirements and assessed values on tax rates is shown by Figure 9; line "A", the basic rate, has fluctuated from year to year. Between 1921 and 1937, rates averaged about \$2.58 per \$100 of assessed valuation, but were as high as \$2.77 in 1921, and as low as \$2.33 in 1933. The Bankers Agreement, of course, placed a limit on taxes levied during the period of 1934-1937, inclusive.

The 1938 (including six months of 1939) Executive Budget requirements, and the staff estimate of aggregate assessed value, indicate a basic rate of more than 2.73 for this period. Accordingly, it was assumed that a 2.73 rate will hold for the fiscal year 1939-40, and that for each fiscal year thereafter the basic rate will be 2.58—the average for the years 1926 to 1937, inclusive.

The State Constitution limits the tax levy for county and city purposes, exclusive of term debt service requirements, to 2 percent of assessed valuation. Line "B", Figure 9, shows the rate for county and city purposes from 1921 to 1937. See Figure 24 for estimates of future budgetary requirements within the 2 percent tax limit.

Tax Levy

Future tax levies, calculated from the assumed tax rate and predicted assessed valuations, are indicated graphically on Figure 10. While the 1938 Executive Budget requires an estimated levy of some 462 million, more than 500 million is the calculated levy for the fiscal year 1940-41, and about 680 million for the fiscal year 1957-58.

REVENUE FROM SPECIAL TAXES

"Special" taxes include: the Bank tax, Moneyed Capital tax; the city's share of Mortgage, Corporation, State Income, and Motor Vehicle taxes; Gas and Motor fuel tax; Real Estate Brokers and Salesmen tax; Alcoholic Beverages tax; Public Utilities, and Business taxes.

Past revenues from these taxes were plotted and carefully analyzed; the revenue per capita for each year 1920 to 1935, shown by Figure 12, has fluctuated considerably. Because of this vacilla-

tion and the nature of "special" taxes, estimates of future annual revenue were conservatively based upon the continuation of the past per capita average of \$5.34. As a result, total revenue—Figure 12—is forecast at only 39.4 million for 1938, 42.1 million for 1939-40, and almost 47.6 million by 1957-58.

REVENUE FROM "OTHER" SOURCES

"Other" revenue is comprised of income from sales of city water; State aid for schools; State and Federal aid for Old Age Relief, and Child Welfare; rentals; interest on taxes; and other miscellaneous revenues. While past trends were carefully considered, income from some of these sources was predicted on the basis of specific studies undertaken by the Mayor's Committee staff.

Water Rates. Extensive studies had been undertaken to determine the city's probable needs for water.⁽⁵⁾ Utilizing the staff forecast of water consumption under present operating conditions, future revenues were calculated at both "old" rates, effective prior to 1934, and at "new" rates now in force. The two calculations, made to ascertain the effect upon revenues if the "new" rates (which are 50 percent above 1933 rates) should be reduced, are shown on Figure 11.

State Aid for Schools. The report on Education indicates an annual decrease in future public school registration.⁽⁶⁾ Therefore state aid was reduced to dollars per capita of total public elementary, junior high and high school registration. From approximately \$6.00 per child registered in 1920, state aid rose steadily to practically \$60.00 by 1933, and then dropped abruptly to about \$25.00 in 1934. The 1935 figure was \$49.00 and the 1938 budget estimate is equivalent to about \$51.00 per child registered. Future state aid per child registered was predicted to increase from the 1938 figure to almost \$60.00 by 1970. The predicted per capita state aid and public school registration figures were then employed to estimate total annual state aid for schools.

State and Federal Aid for Old Age Relief, distributed through the Department of Public Welfare, has increased from about 50 percent in 1933 to 78.5 percent of budgetary appropriations in 1938. Assuming that future contributions will continue at approximately the current level, 75 per-

cent of the predicted expenditures for Old Age Relief were taken as state and federal aid.

State and Federal Aid for Child Welfare is a recent development, and amounts to one-half of the expenditures for this purpose in the 1938 budget. Lacking the guidance of past trends the staff assumed that 50 percent of predicted costs of the Board of Child Welfare will be met by state and federal aid.

The annual totals of state aid for schools, and state and federal aid for Old Age Relief and Child Welfare resulting from these forecasts are shown on Figure 11 as "State and Federal Aid."

Rentals include revenue from: docks and slips; ferry leases and income from municipal ferries; and leases of city owned real property. Since rentals were subject to considerable fluctuation in the past, it was supposed that a flat per capita curve projection at \$1.96, which continues the past annual average, would represent a reasonable future prediction. On this basis revenue from rentals was calculated. See Figure 11.

Interest on delinquent taxes when reduced to per capita figures has shown a tendency to increase modestly from 1920 to 1936. Accordingly, the estimate of future revenue was based upon the per capita curve extension which continues the obvious trend. See Figure 11, "Interest on Taxes".

Miscellaneous revenue includes income from licenses, permits, franchises and privileges (not included under "special franchises"), fees, fines, penalties, forfeitures, reimbursements and other miscellaneous revenue. As might be expected, past per capita revenue from these sources does not adhere to any definite trend, but averaged \$2.95 per year for the period 1920 to 1936. Assuming that future per capita income will continue at this average, total annual revenues were calculated. Estimates of miscellaneous revenues are also shown on Figure 11.

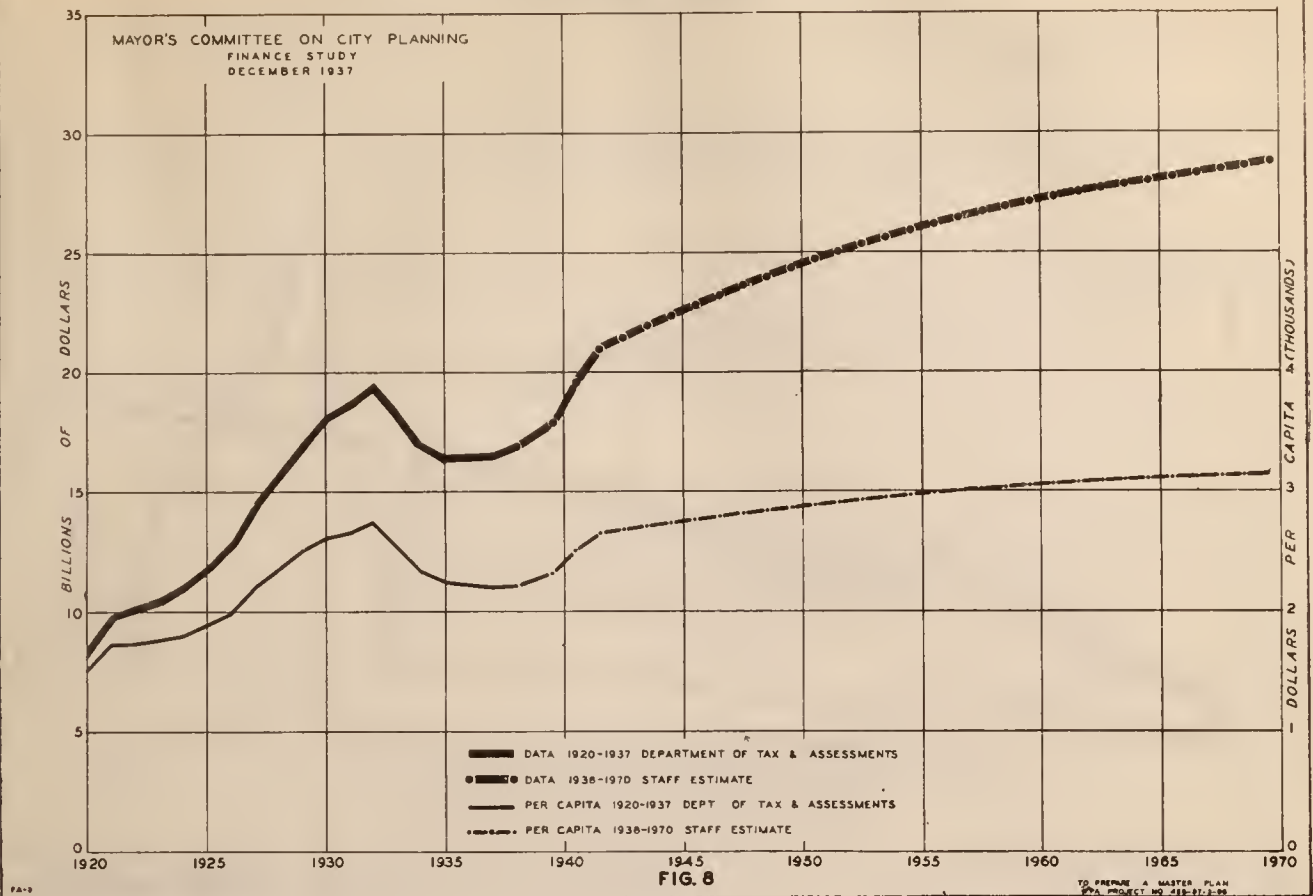
Total revenue from "other" sources, obtained by adding together the above described estimates of the component items, is shown on Figure 13. With present water rates, revenue from "other" sources is expected to increase from 179.3 million in 1939-40, to 220.8 million in 1957-58; at "old" water rates, it is estimated that "other" revenue would be reduced by about 12.4 million in 1939-40, and by more than 15 million in 1957-58. The higher estimate was employed in this study, but if present water rates should be reduced to the 1933 level, the *outgo* estimates would have to be decreased accordingly to balance with the resulting reduction of gross income.

(5) See report on "Water Supply" in *The Planning of Public Services for the City of New York*, Part II of the City-Wide Studies.

(6) See "Education" report in *The Planning of Public Services for the City of New York*, Part II of the City-Wide Studies.

TOTAL ASSESSED VALUE

NEW YORK CITY



TAX RATES NEW YORK CITY..... 1920-1970

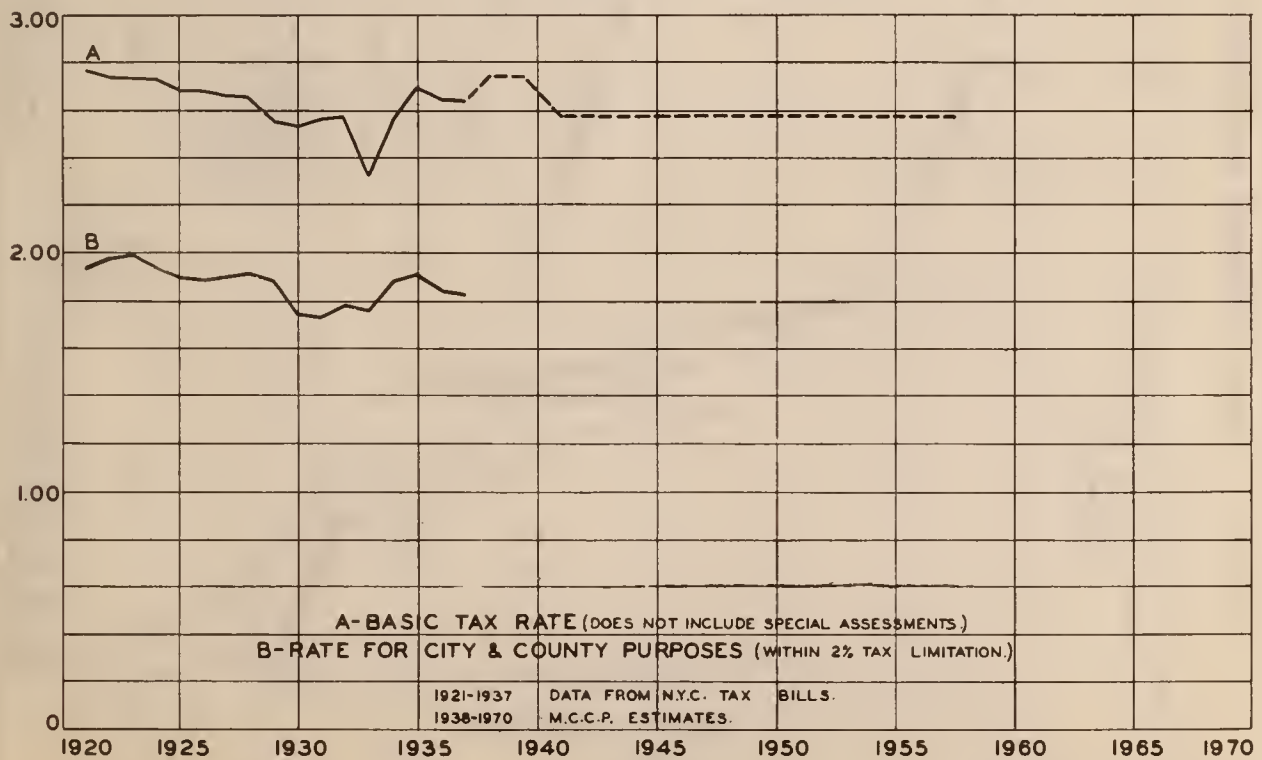


FIG. 9

MAYOR'S COMMITTEE ON CITY PLANNING
PROJECT NO. 465-97-3-96
JANUARY 1938

REAL ESTATE TAX LEVY

EXCLUSIVE OF SPECIAL ASSESSMENTS
NEW YORK CITY

MAYOR'S COMMITTEE ON CITY PLANNING
FINANCE STUDY
DECEMBER 1937

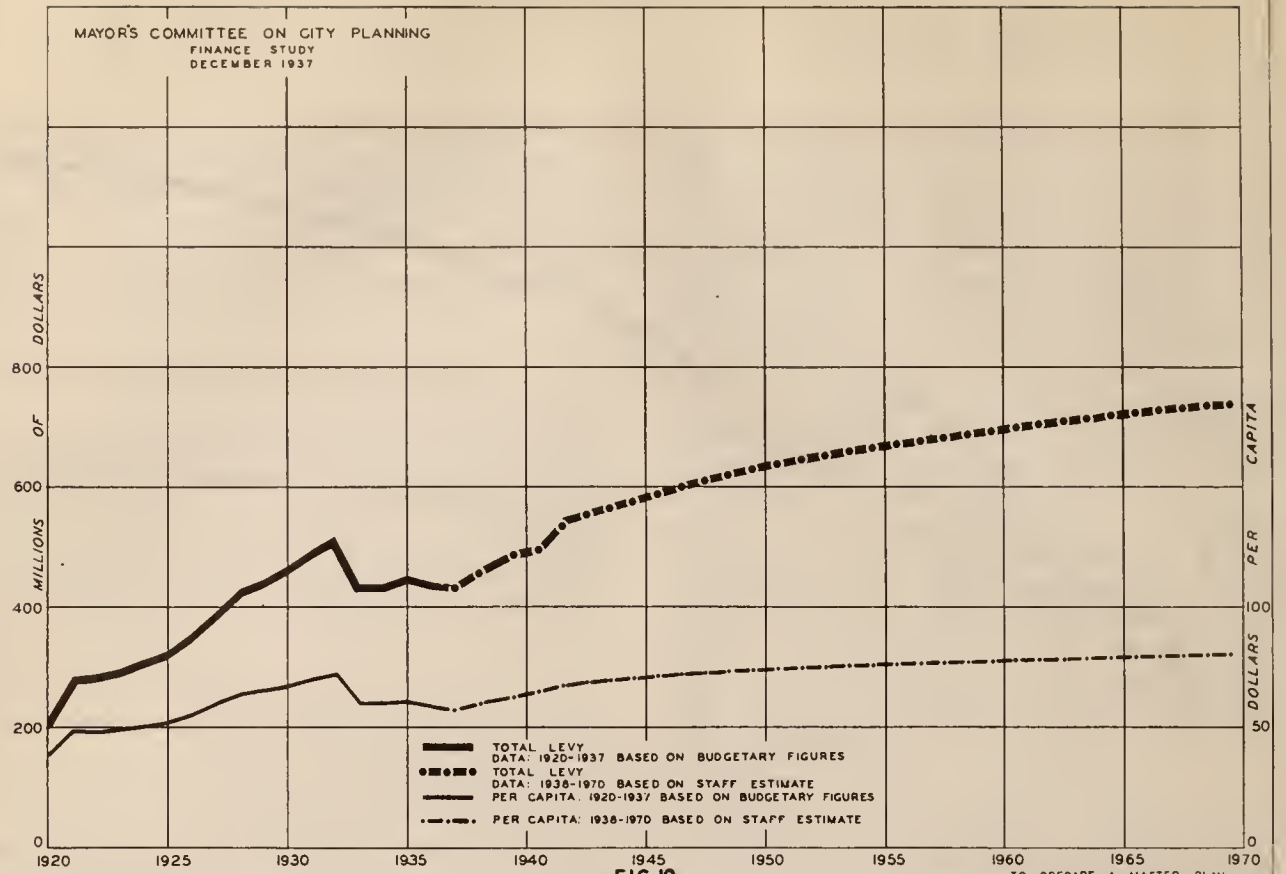


FIG. 10

TO PREPARE A MASTER PLAN
W.P.A. PROJECT NO. 465-97-3-86

DETAILED ESTIMATES OF REVENUE FROM OTHER SOURCES.



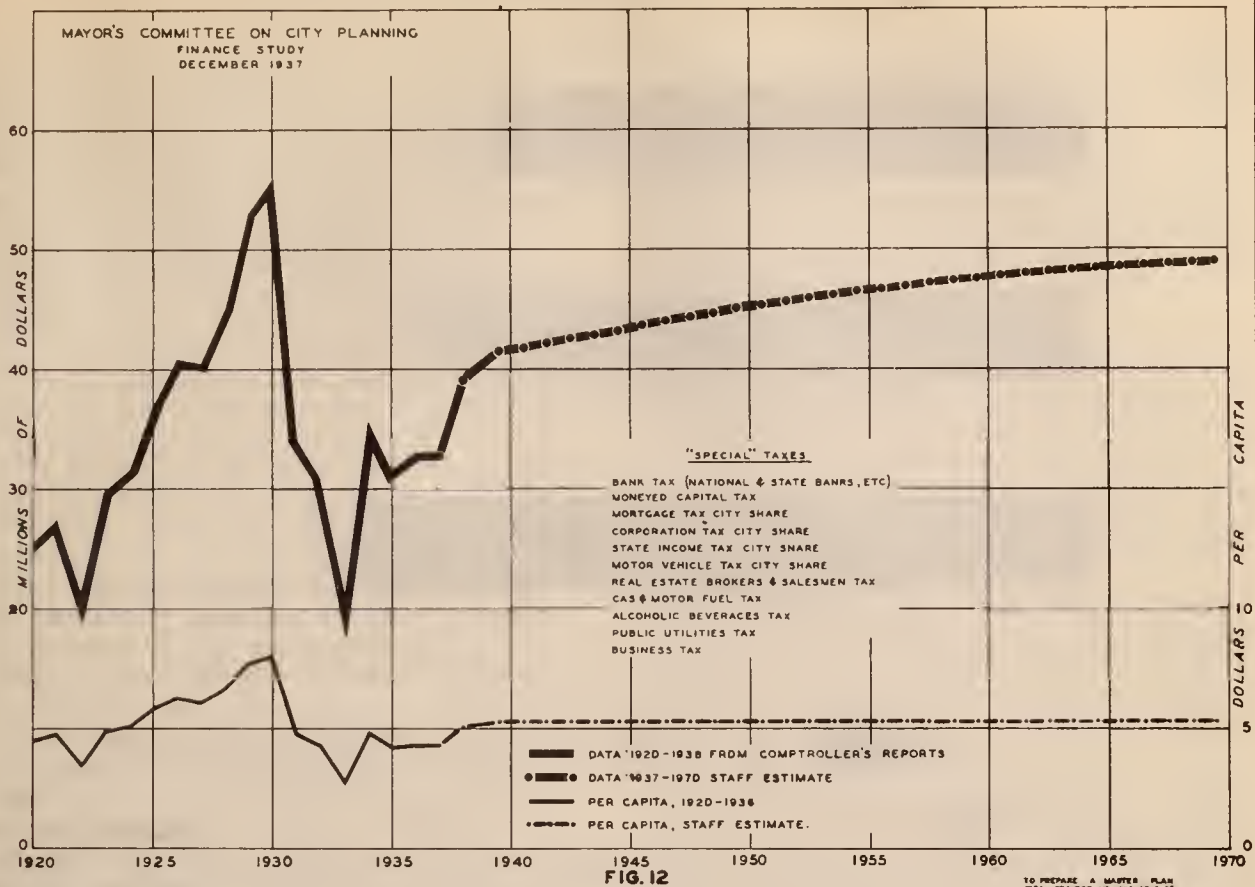
FIG. 11

DATA: 1920-1936 FROM COMPTROLLER'S REPORTS
DATA: 1937-1938 FROM BUDGET ESTIMATES
DATA: 1939-1959 STAFF ESTIMATE

TO PREPARE A MASTER PLAN
W.P.A. PROJECT NO. 465-97-3-96

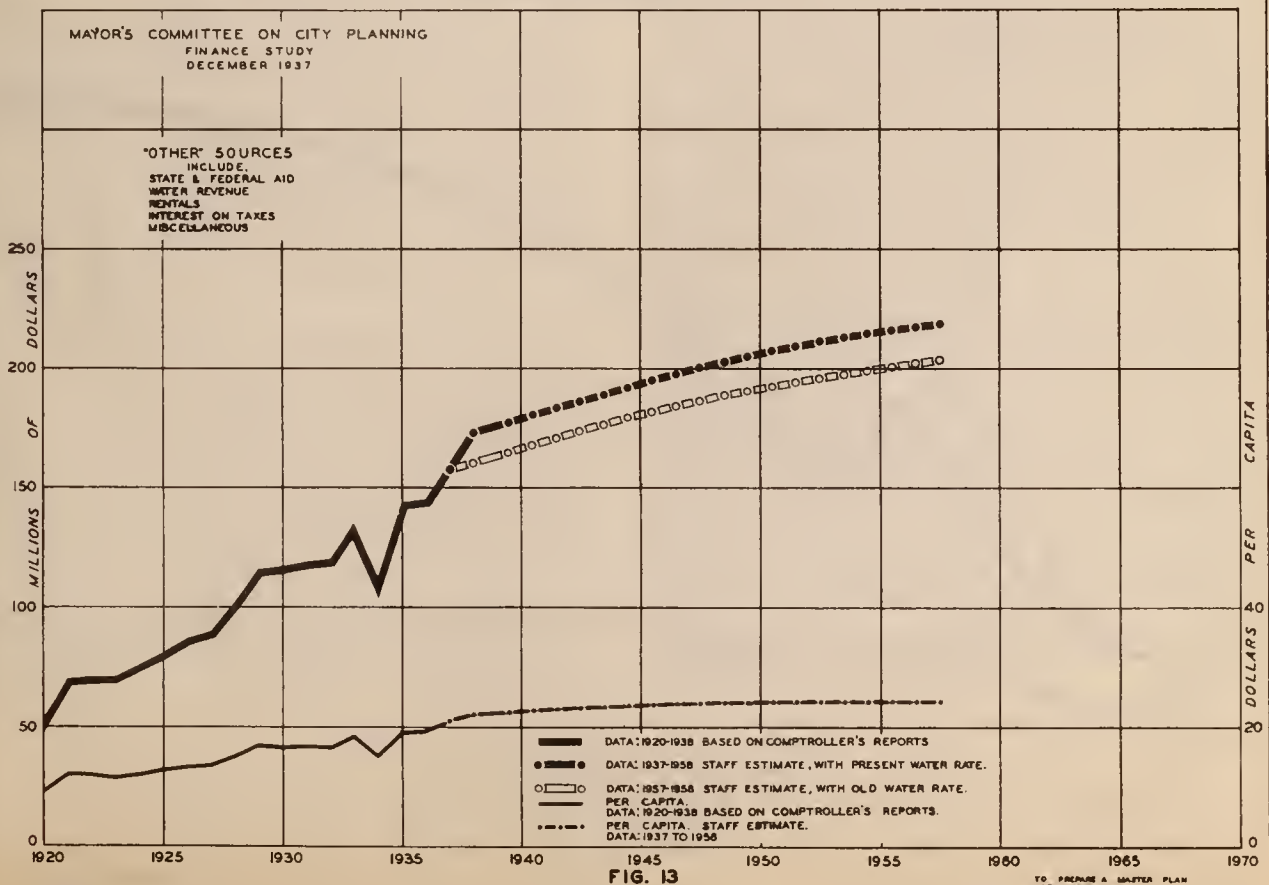
REVENUE FROM SPECIAL TAXES

EXCLUSIVE OF SPECIAL TAXES FOR EMERGENCY RELIEF
NEW YORK CITY



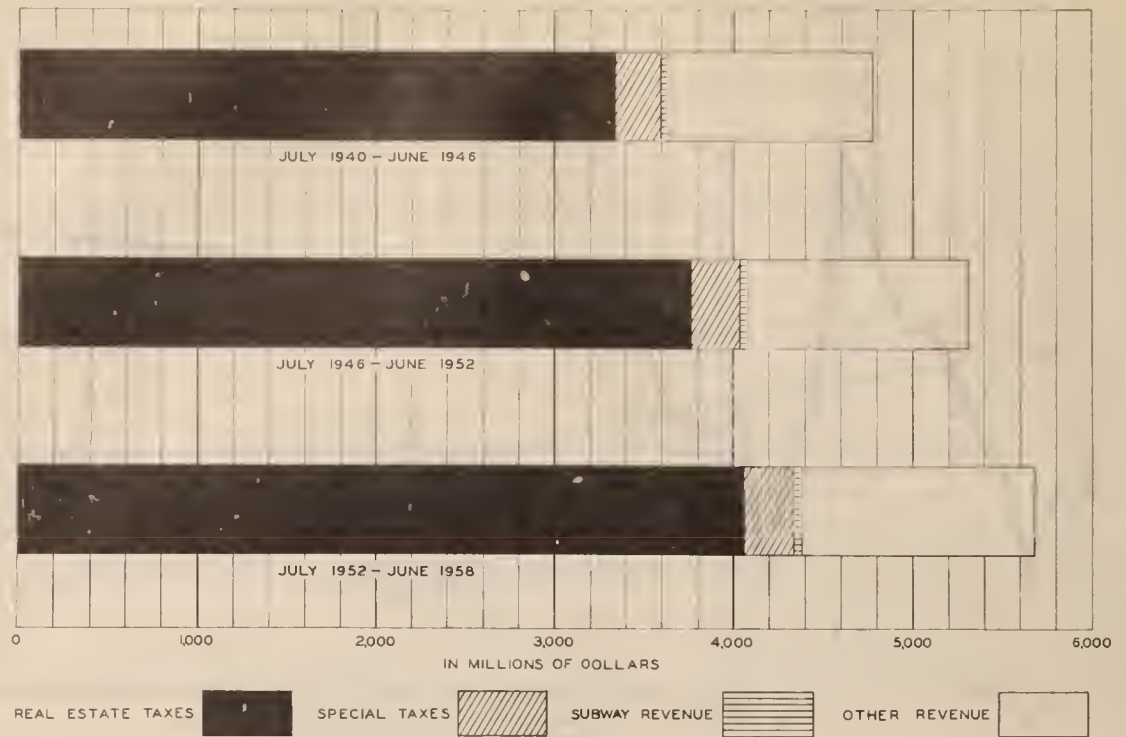
REVENUE FROM "OTHER" SOURCES

NEW YORK CITY



INCOME

ESTIMATES OF TOTAL INCOME FOR THREE 6-YEAR PERIODS



MAYOR'S COMMITTEE ON CITY PLANNING
FINANCE STUDY
DECEMBER 1937

TO PREPARE A MASTER PLAN
WPA PROJECT NO 485-97-3-96

FIG. 14

COST OF OPERATION & MAINTENANCE

OF CITY & COUNTIES BASED ON BUDGET APPROPRIATIONS
NEW YORK CITY

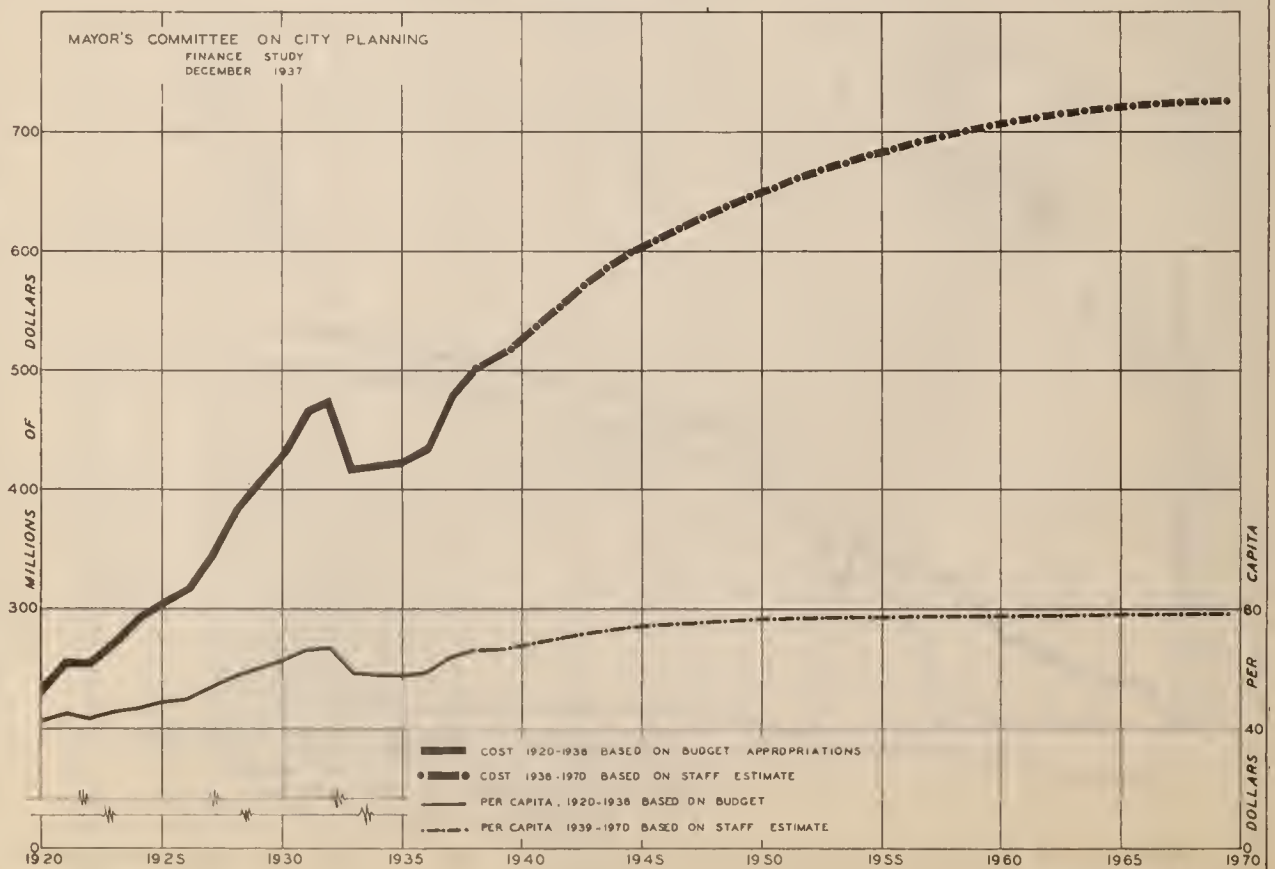


FIG. 15

TO PREPARE A MASTER PLAN
WPA PROJECT NO 485-97-3-96

REVENUE FROM SUBWAYS

Under the subway contracts, the city receives an annual rental, and the city-owned Independent subway is also required to pay interest on transit debt from its capital reserve fund. Inasmuch as revenue from subways is definitely segregated for debt service, it was decided to treat such revenue as a separate item in this study.

The IRT lines (now in receivership and apparently losing passengers to the Independent subway) and the BMT did not seem to present a favorable outlook so far as income to the city is concerned; from \$1.32 per capita in 1929, rentals from both the BMT and IRT declined steadily to 35c. in 1936. While staff studies of rapid transit indicate a future growth in total subway traffic it was not believed realistic to expect any substantial increase in revenues to the city under existing contracts.⁽⁷⁾ Future revenue was therefore calculated on the basis of annual payments continuing at 36c. per capita.

The Independent subway lines have operated for such a short time that there are not sufficient data available upon which future payments may be forecast. Payments from the capital reserve fund were just over 21c. per capita in 1935, about 51c. in 1936, and almost 60c. in 1937. In the 1938 budget this revenue is estimated at approximately 55c. per capita. In view of recent increases in

operation costs, future revenue from the capital reserve fund was not expected to exceed 55c. per capita per annum.

Total revenue from subways, predicted on the basis of 91c. per capita per year (36c. from the IRT and BMT and 55c. from the Independent), increases from about 7 million in 1939-40 to only 8.1 million by 1957-58.

PROBABLE GROSS REVENUE

The total revenue resulting from these estimates is indicated for three 6-year periods on Figure 14. For the first 6-year period, July 1, 1940 to June 30, 1946, the real estate tax levy amounts to more than 3 billion; special taxes total 258.6 million; "other" revenue exceeds 1.1 billion; and, subway revenue is in excess of 44 million. Total gross revenue is more than 4.7 billion.

For the second 6-year period, July 1, 1946 to June 30, 1952, the forecasts are approximately 3.7 billion from the real estate tax levy; 271.6 million from special taxes; "other" revenue 1.2 billion; and, subway revenue 46.2 million; making a total of about 5.3 billion.

During the third 6-year period, July 1, 1952 to June 30, 1958, the real estate tax levy is estimated at more than 4 billion; special taxes exceed 280 million, "other" revenue 1.3 billion and subway revenue 48 million; which produce a total of more than 5.6 billion gross revenue.

Outgo

Before undertaking forecasts of expenditures payable from estimated revenues, it was necessary to analyze past budgetary appropriations for city and county purposes, appropriations required by law, and service charges on outstanding funded debt. Upon this groundwork, and with due consideration to the requirements of the new charter, future expenses were predicted and compared with estimated revenues to determine the balance of income expected to be available to finance new permanent improvements.

The Outgo study was separated into five sections: (1) costs of operation and maintenance of county and city agencies; (2) budgetary appropriations required by law; (3) service charges on temporary debt; (4) service charges on term debt outstanding and authorized prior to the 1938 Capital Budget; and (5) balance of income available to finance new capital outlays.

(7) See report on "Rapid Transit" in *The Planning of Public Service for the City of New York*, Part II of the City-Wide Studies.

OPERATION AND MAINTENANCE COSTS

In this study, each department or agency was placed in one of nineteen groups, each group having common characteristics or functions. Budgetary appropriations for the years 1920 to 1938 were obtained for all agencies and summarized for each group. After the nineteen annual total and per capita curves had been plotted and carefully analyzed, the per capita curves were extended to obtain future costs.

In projecting these curves, the staff considered obvious long-time trends and any special factors relating to the functions of each group of agencies. Although per capita operating costs in American municipalities tend to increase with the size of a city, it was assumed that New York's future per capita expenses would probably reach an ultimate peak not later than the year 1970, when the population is expected to become stabilized.⁽⁸⁾ Therefore most extensions of per capita curves are concave up and tangent by 1970 or prior thereto.

(8) See section on "Population Pattern" in *Basic Factors in The Planning of the City of New York*, Part I of the City-Wide Studies.

Agency Grouping

Group I—Board of Aldermen (replaced by the City Council under the charter) and City Clerk, Board of Estimate, Mayoralty, Borough Presidents (exclusive of Departments of Building and Buildings Maintenance which are transferred by the charter to other agencies), Board of Standards and Appeals, City Record, Advertising and miscellaneous appropriations. From \$2.48 per capita in 1920 appropriations rose to \$3.77 in 1930, then dropped abruptly to \$2.28 in 1935. Thereafter costs went up gradually to \$3.90 in 1938. The 1929 to 1930 peak was due mainly to miscellaneous appropriations which apparently were not "normal" and therefore are assumed unlikely to recur. Accordingly, the predicted curve allows for normally rising costs to a tangent of \$5.20 per capita in 1970. Estimated costs include the new City Council and the City Planning Commission.

Group II—The Parole Commission, Board of Child Welfare, Examining Board of Plumbers, Armory Board, Board of Elections, and the Municipal Civil Service Commission. Per Capita costs were about 90c. in 1920 and \$2.04 in 1932, but declined to \$1.69 in 1935. The jump to \$2.62 per capita in 1938 is due, in large measure, to increased expenditures by the Board of Child Welfare. In predicting future costs separate curves were drawn for the Board of Child Welfare and for the other agencies. It was assumed that the present Child Welfare Law will require increasing appropriations and that the other agencies will need normal increases. The total predicted group costs rise from \$2.80 per capita in 1939-40 to a tangent of \$3.42 in 1970.

Group III—the Departments of Licenses, Purchase, Finance, and Taxes; Bureau of the Budget, Commissioner of Accounts, City Chamberlain, Rents, Commissioner of Estimates and Appraisal, and the Board of Assessors. Under the charter, the Commissioner of Accounts became the Department of Investigation, and the City Chamberlain was replaced by a City Treasurer, who assumed certain functions formerly under the Finance Department. Past trends show a minor but constant increase from 63c. per capita in 1920 to \$1.06 in 1931; with a slight depression drop thereafter, which was regained in 1938. With the transfer of functions within this group, past trends will probably be continued. The predicted curve goes from \$1.06 per capita in 1939-40 to a tangent of \$1.50 in 1965, and is constant thereafter.

Group IV—Law Department, City Court, Commissioner of Records, Court of Special Sessions,

Domestic Relations Court, City Magistrates' Courts, and the Municipal Court. The past trend of this group is similar to that of Group III, rising from 76c. per capita in 1920 to \$1.06 in 1938. The per capita curve extension continues the trend, rising from \$1.11 in 1939-40 to a tangent of \$1.50 in 1965.

Group V—Contains the five county agencies, namely: New York, Bronx, Kings, Queens and Richmond. The past costs per capita, fluctuating from year to year, have risen from \$1.55 in 1920 to \$1.97 in 1938. While the charter makes no changes in these agencies, a citizens' mandate calls for reorganization of county governments, which it was assumed will be carried out and result in some reduction of total costs. Hence, costs were predicted at \$1.90 per capita, which is slightly above the average for the period 1920 to 1938. It should be remembered that with an increasing population, a flat per capita curve produces annually rising total costs.

Group VI—the Departments of Health and Hospitals. No figures are available prior to 1923, when expenses were \$2.59 per capita. Thereafter, appropriations moved upward to \$3.60 in 1932, reaching a peak of \$4.12 in 1938. This rapid rise was due to an expansion of public health services, which it was assumed is likely to continue. The predicted curve, therefore, ascends from \$4.20 in 1939-40 to a tangent of \$5.00 in 1956-57, and is thereafter constant.

Group VII—Office of Chief Medical Examiner, Commitment of Insane Persons and the Department of Correction. Past per capita expenditures have been practically constant, starting with 44c. in 1920 and reaching 50c. in 1938. The curve extension continues this trend, going from 47c. in 1939-40 to a tangent of 50c. per capita in 1970.

Group VIII—Payments to charitable institutions in New York City, and the Department of Public Welfare, (exclusive of hospitals which are part of Group VI). Per capita appropriations have grown rapidly from \$1.37 in 1923, to \$5.31 in 1938, due to the demand for more adequate public welfare services and contributions. Because of extensive state and federal aid for Old Age Relief under the Department of Public Welfare, future costs of these agencies were forecast separately. Assuming that welfare needs will continue to increase and that costs will be met in part by state and federal aid, the per capita curve rises from about \$3.00 in 1938 to a tangent of \$5.00 in 1970. In the case of charitable institutions, per capita contributions are expected to ascend from about \$2.00 in 1938

to about \$3.00 in 1970. Total costs of Group VIII, therefore, are predicted to increase from \$5.62 per capita in 1939-40, to a tangent of approximately \$8.00 by 1970.

Group IX—Department of Parks. From 59c. per capita in 1920, past costs increased to only 69c. in 1935, but jumped to \$1.15 by 1938—as a result of the expansion in park facilities during the depression.

In extending this curve from \$1.31 in 1939-40 to a tangent of \$2.00 in 1970, allowance was made for authorized increases in park acreage, and for a further development of facilities needed in the future, which will require larger expenditures for maintenance.

Group X—Board of Higher Education and Hunter College with the various schools thereunder. From 26c. per capita in 1920, annual outlays rose to a peak of \$1.24 in 1938. The tendency to enlarge higher educational facilities is reflected in the expansion of Hunter College and the recent opening of Queens College. Assuming that the trend to provide additional college training, as well as adult education at public expense will continue in the future, predicted costs rise from \$1.30 per capita in 1939-40 to a tangent of \$2.00 in 1965.

Group XI—Board of Education. Due to the expectation that future public school registration will show a continual annual decrease, past appropriations were plotted on the basis of per capita school registration. This curve fluctuates considerably, but shows a long-time increase from \$109.00 per child in 1920, to \$140.55 per child registered in 1938. The likelihood of smaller classes per teacher in the future was considered in extending the per capita registration curve, which rises from the 1938 point to a tangent of \$150.00 per child in 1950-51, and thereafter is constant. Transposing the per capita registration figures to total costs, and then to per capita costs based on the city's expected population produced a curve downward from \$20.08 in 1938 to \$16.00 in 1957-58, and to approximately \$15.00 per capita by 1970.

Group XII—the Art Commission, Public Libraries, Museums, Aquarium, Botanical and Zoological Gardens, Grants Tomb, etc. Past per capita costs were relatively small and show only a slight rise from 66c. in 1920 to 68c. in 1938. In extending this curve a reasonable allowance was made for normal per capita increases from 73c. in 1939-40 to a tangent of \$1.00 in 1970.

Group XIII—Department of Sanitation. Costs have risen from \$2.60 per capita in 1920 to \$3.83

in 1938. Future needs for additional services require allowance for reasonable annual increases, which are predicted to run from \$3.83 per capita in 1939-40 to a tangent of \$7.00 in 1965.

Group XIV—Tenement House Department and the Building Departments of the Borough Presidents' offices. These agencies are consolidated by the charter under one Department of Buildings and Housing. Past per capita appropriations have grown from 28c. in 1920 to 38c. in 1938, and the predicted expenses would continue this trend from 39c. per capita in 1939-40 to a tangent of 60c. in 1960.

Group XV—Departments of Public Markets, Weights and Measures; Plant and Structures; and Docks. The charter transfers functions of agencies within this group, including the new Department of Public Works which displaces Plant and Structures. Past expenditures have fluctuated from \$1.38 per capita in 1920 to a peak of \$2.45 in 1928, dropping to \$1.55 in 1935 and 1936, then ascending again to \$1.79 in 1938. This curve was extended to include a normal increase in per capita operation costs from \$1.79 in 1939-40 to a tangent of \$2.50 in 1965, thereafter remaining constant. It was assumed that any additional expenses due to designing and supervising public improvements will be paid from capital funds, as has been done in the past in the case of other agencies.

Group XVI—Department of Water Supply, Gas and Electricity. Per capita expenditures have varied from year to year but the long-term trend was from \$1.61 in 1920, to \$2.42 in 1938. Predicted per capita appropriations would continue this trend from \$2.42 per capita in 1939-40 to a tangent of \$3.50 in 1970.

Group XVII includes the following Retirement Systems: New York City Employees; Board of Education; Teachers'; and Hunter College. Past expenditures on account of these agencies show a rapid rise from 47c. per capita in 1920 to \$2.89 in 1938. Since a realistic extension of the per capita curve would continue current trends, costs were predicted to go from \$2.90 in 1939-40, to a tangent of \$4.00 by 1970.

Group XVIII—Police Department; for which appropriations have increased from \$4.38 per capita in 1920, to \$7.70 in 1938. Recognizing the present need for a larger force and allowing for a future normal increase, the per capita curve was extended from \$7.70 in 1939-40 to a tangent of \$10.00 in 1965, and is thereafter constant.

Group XIX—Fire Department. Per capita costs rose from \$2.35 in 1920, to almost \$3.00 in 1936. The 3-platoon system, now being initiated, will increase per capita appropriations to \$3.84 in 1938, and to \$4.30 in 1939-40. Thereafter, predicted expenses ascend to a tangent of \$5.00 in 1957-58. If the firemen should be required to contribute toward their pension fund in the future, it is probable that they will receive increased pay, which would, in effect, transfer some of the pension costs (included in estimates of costs under Item 5, Section 117 of the charter) to this group.

The expenses of the Transit Commission, and the Boards of Transportation and Water Supply were omitted from the above nineteen groups. The expenses of the Transit Commission, payable by the city, are provided for under Section 117. The expenses of the Boards of Transportation and Water Supply are paid from capital funds, since both agencies are engaged primarily in planning and directing the execution of permanent improvements. It was assumed that current operation costs of the Independent Subway will be met out of operating revenue.

Summary of Costs

When the nineteen separate group predictions had been completed, they were added together to obtain *total per capita* expenditures for each fiscal year. With these predicted per capita costs and the staff population estimates total anticipated expenses, or budgetary appropriations, for operation and maintenance were calculated. It was not possible to publish the charts showing costs for each of the nineteen groups. However, these charts are on file in the Sponsor's office.

Deduction of Costs Charged to Capital Outlay

While this study excluded revenue from borrowing, New York's budget usually includes appropriations payable from corporate stock, serial bond or assessable improvement funds, to cover that portion of expenses chargeable to the design and supervision of permanent improvements. Therefore, it was necessary to determine the extent of such appropriations and to adjust the estimated future costs accordingly, in order to place predicted operation and maintenance expenditures on a basis comparable with estimated revenues.

For the years 1930 to 1938 inclusive, budgetary appropriations included part of the expenses of the following agencies on the above mentioned basis: Law Department; Board of Assessors; the five Borough Presidents' offices; the Board of

Education; the Department of Parks; Hospitals; Water Supply, Gas and Electricity; Sanitation; Docks; and Fire. The amount of appropriations payable from capital outlay funds averaged 0.85 percent of total expenditures for these years. On the assumption that this eight-year average would apply in the future, estimated operating expenses for each fiscal year were reduced by 0.85 percent. The resulting costs, shown on Figure 15, are therefore equal to 99.15 percent of the annual totals of the nineteen group predictions. The expenses thus deducted from operation and maintenance are included in cost estimates considered in the "Program for Permanent Improvements."

Per Capita and Total Expenses

Reference to Figure 15 will show that both total and per capita expenses rose almost uninterruptedly from 1920 to 1932; total costs were doubled and per capita expenses increased from \$42.25 to slightly more than \$67.00. The 1933 appropriations fell sharply to \$58.00 per capita and remained practically at this level until 1937, when the per capita figure climbed to \$63.75. These curves reflect the rapidly expanding appropriations of the boom years, when taxable values were mounting, and the subsequent decline due to the depression.

Estimated Future Expenses

The predicted expenses are shown by a smooth per capita curve, which from \$66.70 in 1939-40, rises to about \$78.50 in 1957-58, and reaches approximately \$80.00 by 1970. Total appropriations for operation and maintenance in the 1938 Executive Budget are just over \$504,700,000 while the estimated costs for the first six months of 1939 are in excess of 256 million. For the fiscal year commencing July 1939, and ending June 30, 1940, total appropriations were predicted to exceed 521 million. For the *6-year period* commencing July 1940, total costs of more than 3,477 million were predicted; for the *following 6-year period* costs were estimated at some 3,869 million; and for the *third 6-year period* commencing July 1952, the estimated costs of operation and maintenance totaled 4,117 million.

Obviously, there is no attempt to predict periods of business recession, but rather to present an average expectancy from which the actual appropriations will doubtless vary, depending upon conditions. In this study it was not deemed proper to attempt to determine the relative efficiency of agencies, nor to suggest the direction of desirable economies. In projecting the operation and main-

tenance curves, therefore, there was no intention to offer suggestions as to the amount of appropriations considered adequate for various agencies. These curves merely indicate the expected average approximations that will probably result from a continuation of current trends. However, it was believed that these estimates furnish a reasonably good basis for study.

While future operating expenditures were predicted as a long-time continuation of current trends, the magnitude of these appropriations suggests that the city must carefully examine each request for increased public services to determine not only the social value but the economic implications thereof.

APPROPRIATIONS REQUIRED BY LAW

These items of outgo include appropriations, not heretofore provided in the budget, for recurring contingencies, and appropriations to the tax deficiency account and to the tax reserve fund.

Appropriations Not Heretofore Provided in The Budget

Section 117, Item 5 of the charter, requires the city to provide annually in the budget, for recurring contingencies, an amount equal to the average of all expenditures during each of the five preceding fiscal years for the following: payment of claims, judgments, charges and expenses; expenses of snow removal; expenses of the demolition of unsafe buildings and the repaving of streets. For 1938 however, the charter requires that only 1/5 of the total amount be included in the budget; for the fiscal year 1939-40 only 2/5; for the fiscal year 1940-41 only 3/5; for the fiscal year 1941-42 only 4/5.

Inasmuch as it was unusually difficult to ascertain past expenditures for these items, 1938 Executive Budget appropriations were employed to determine probable future costs.

full 5/5 averaged \$14,675,000 per year. Using the staff population figures, this average expenditure is \$1.918 per capita for 1938. On the expectation that the five-year average of these expenditures will increase at the annual rate of 1.7c. per capita (which is roughly equal to the predicted rate of increase for operation expenses), future costs under Section 117 were estimated. Table 2 shows the results of this estimate up to 1943.

Under Section 249 of the charter, the Comptroller is authorized to issue tax notes for the items specified in Section 117 whenever the amounts necessary shall exceed the amounts appropriated therefor in the budget. Therefore, the amounts in column six of Table 2 were included in studies of short-term borrowing. See section "Service Charges on Temporary Debt". Figure 16 indicates the annual per capita increases and the resulting budgetary appropriations required; by 1957-58, the predicted per capita cost is \$2.25 and the total appropriation more than 20 million.

Miscellaneous appropriations, such as the city's share of assessable improvements and the meeting of any deficiencies in the two assessable improvement funds due to uncollectable special assessments, were assumed to be included in estimated expenses under Item 5 of Section 117. See the discussion of contingent borrowing under "Service Charges on Temporary Debt."

Appropriations to the Tax Deficiency Account

Section 131 of the charter sets up the Tax Deficiency Account and provides that this account shall be charged or *debited* with: (1) All discounts allowed for the prepayment of taxes; (2) The amount of all taxes cancelled or remitted; (3) A sum equal to so much of the deficiency on the preceding first day of January, in the product of taxes theretofore levied and in arrears for four or more years as shall not have been provided for in prior tax levies or by the issue heretofore of corporate stock.

1938 Executive Budget Appropriations

Judgments, Claims and Expenses	\$ 375,000
Snow Removal	825,000
Paving and Repaving of Streets	775,000
Demolition of Unsafe Buildings	11,000
Expenses of the Transit Commission	199,500
Pensions (Fire Department)	619,500
Expense of Collection of Emergency Taxes	130,000
Total	\$ 2,935,000

The 1938 budget appropriation, being equivalent to 1/5 of the average amount expended during each of the five preceding years, indicates that the

Such account shall be *credited* with: (1) All appropriations or parts thereof transferred to such account pursuant to Section 129 during the cal-

TABLE 2
Charter Requirements for Financing Items Under Section 117
(*Figures in Millions of Dollars)

Fiscal Year	Dollars Per Capita	Total Estimated Expenditure *	Proportion in Budget	Amount Included in Budget *	Balance to be Borrowed *
(1)	(2)	(3)	(4)	(5)	(6)
1938	1.919	14.675	1/5	2.935	11.740
1/2-1939	0.968	7.485	1/5	1.497	5.988
1939-40	1.944	15.304	2/5	6.081	9.222
1940-41	1.961	15.578	3/5	9.290	6.287
1941-42	1.978	15.855	4/5	12.604	3.251
1942-43	1.995	16.034	5/5	16.034	.....

endar year preceding the adoption of the budget; (2) The amount by which the total of the taxes levied for the current fiscal year exceeds, by reason of the fixing of the tax rate in cents and hundredths of a cent upon each dollar of assessed valuation, the total amount required to be raised by taxes; (3) The amount of delinquent taxes collected prior to the preceding first day of January theretofore charged against this account.

The charter further provides that there shall be appropriated annually in the budget a sum equal to the amounts by which the debits shall exceed the credits of this account.

Section 132 of the charter establishes the "Tax Appropriation Reserve Fund", and provides that "To this fund there shall be appropriated annually in the budget a sum sufficient to bring the total accumulations of said fund to an amount equal to 30 per centum of the tax levy of the current fiscal year, but *in no event shall the amounts appropriated to the tax deficiency account and the tax appropriation reserve together exceed 2 per centum of the tax levy of the current fiscal year.*"

The rate at which the reserve fund will accumulate, therefore, depends to some extent upon the proportion of annual appropriations under this 2 percent limit that will be required to balance the tax deficiency account. Since these appropriations are a function of the tax levy, it was desirable to express both debit and credit items in the tax deficiency account as a percent of levy.

There were no up-to-date statements of the old "Tax and Appropriation Surplus and Deficiency Account" available, consequently careful investigations were made to determine the relation of the several items to past tax levies, and to obtain

the annual average appropriation required to balance the tax deficiency account.

The following debit items were based upon analyses of the Comptroller's reports for the years 1920 to 1936 inclusive:

Discounts allowed for prepayment of taxes during this period were found to equal 0.09 percent of the tax levies for these years; *taxes cancelled or remitted* were equivalent to 0.49 percent of the tax levies; *taxes delinquent for four or more years*, not heretofore provided for, from the 1933 and prior levies were 0.38 percent of total levies for the corresponding period, 1905 to 1933; *the annual average of taxes that become four years in arrears*, based upon the levies of 1920 to 1932, was found to be 1.12 percent of the levies for 1924-1936, or in other words, during the period 1924-1936 the annual average amount of taxes that became four years in arrears was equivalent to 1.12 percent of the levies for these years. The annual average of debit items, totaling 2.08 percent of levy, are shown graphically on Figure 18.

The following *credit* items were also based upon analyses of the Comptroller's reports for the years 1920 and 1936 inclusive:

Unexpended balance of appropriations transferred to the account during 1920-1936, were equal to 0.64 percent of the total levies for this period; *gains from extensions of the tax rates* for the period 1920-1936 were 0.21 percent of total levies for the same years; *average annual collection of taxes four or more years in arrears* during 1920-1936 was equivalent to 0.76 percent of the levies for this period.

Since the above credit items total 1.61 percent of levy, the annual average appropriation required to balance credits and debits is equivalent to 0.47

percent of levy. See Figure 18. For the purpose of this study it was assumed that appropriations required to balance the tax deficiency account in the future will be equal to this past annual average percent of levy.

Appropriations to the Tax Reserve Fund

The 1938 Executive Budget includes an appropriation of \$8,753,000 to the tax appropriation reserve fund, which is equivalent to 1.89 percent of the 1938 levy. Under the charter this appropriation also covers the tax deficiency account. The average annual amount required to balance the tax deficiency account was found to be 0.47 percent of levy. Therefore, the *net appropriation* to the reserve fund would be the difference between 1.89 and 0.47, or 1.42 percent of levy.

Inasmuch as it is not practical to provide an appropriation of exactly 2 percent in the budget, it was assumed that future annual appropriations to both the tax deficiency account and the reserve fund will be 1.89 percent of levy.

Figure 19 shows this relation between appropriations to the tax deficiency account and to the tax reserve fund expressed as percentage of levy. The marked decrease in appropriations to the reserve fund after the fiscal year 1959-60 is discussed below.

Section 132 of the charter establishing the "Tax Appropriation Reserve Fund", provides that this fund shall be credited with the balance remaining in the old "Tax and Appropriation Surplus and Deficiency Account." The 1938 Executive Budget shows an estimated surplus or excess of credits over debits, in the old "Tax and Appropriation Surplus and Deficiency Account" in the amount of \$20,948,108, as of December 31, 1936. Therefore, the reserve fund was assumed to start with a credit of 20 million dollars; during the year 1938 the *net addition* is expected to be 1.42 percent of levy, or \$6,572,788. For each year thereafter, the net appropriation to the tax reserve fund was calculated at 1.42 percent of predicted levy, until the total accumulations reached 30 percent of tax levy.

On this basis annual appropriations would increase from about 7 million in 1939-40, to over 9.7 million in 1957-58, and to a peak of almost 10 million by 1959-60, when the fund would practically reach the required 30 percent of levy. Figure 17 shows the accumulation of the fund, which would be brought to 30 percent of levy in 1960-61, with an appropriation of some 6.3 million, or 0.89 percent of levy. Thereafter, less than 0.2 percent

of levy, or under 1.5 million would be needed each year to maintain the fund at the required level.

SERVICE CHARGES ON TEMPORARY DEBT

The charter limits the types of short-term obligations to bond anticipation notes, revenue bills, special revenue bills, and tax notes; and provides that no obligation of any nature or kind shall be issued except for the purposes for which obligations of such nature or kind are by the charter expressly authorized to be issued.

Bond Anticipation Notes

Bond anticipation notes may be issued in anticipation of the sale of authorized serial bonds or corporate stock; the proceeds can be used only for such authorized capital outlay, and the notes must be redeemed from proceeds of the sale of serial bonds or corporate stock in anticipation of which such notes were issued. (Section 246 of charter.)

In this study it was assumed that future term debt will be issued shortly after the close of the capital budget period in which such debt was authorized. This supposition implies that interest on bond anticipation notes is included in estimated service charges for new term debt; hence, such interest charges do not appear as a separate item in this study.

Revenue Bills

Revenue bills may be issued during any fiscal year, within limits as to amounts, only in anticipation of the collection of real estate taxes to meet expenditures payable from such taxes; and revenue bills must be redeemed out of the proceeds of the taxes in anticipation of the collection of which they were issued—Section 247 of charter. Redemption of revenue bills will not appear in future budgets, but appropriations to cover interest on such obligations must be included.

The Comptroller is authorized under Section 132 of the charter to borrow without interest from the tax reserve fund for the same purposes for which he may issue revenue bills. Therefore, the magnitude of future public borrowing and interest charges thereon, in anticipation of the collection of real estate taxes, will be directly affected by the rate at which the tax reserve fund accumulates.

The method employed to calculate the probable annual amounts of revenue bills that will be sold publicly, and the interest charges thereon is illustrated by Table 3. Column (2) of this table shows the estimated accumulation of the tax reserve

fund; column (3) gives the cost of operation for county and city purposes payable from tax levy; column (4) indicates the estimated cash required to operate for each fiscal year; column (5) gives the estimated amount of public borrowing required, which amount is the difference between "cash required to operate" and "accumulation of the reserve fund"; and, column (6) contains estimates of interest charges on revenue bills sold to the public.

An inspection of the table will reveal that as the tax reserve fund builds up there is a progressive annual decrease in "balance to be borrowed"; by 1947-48, the reserve fund is expected to contain sufficient cash to meet the requirements for operation borrowing, and thereafter, on this basis, there would be no interest charges on revenue bills.

In theory, revenue bills equal in amount to one-quarter of operating costs would be issued twice each year to meet expenses during the two 3-month intervals between the beginning of the fiscal year and the collection of the first installment, and between the middle of the fiscal year and the payment of the second installment of real estate taxes. The practical requirements of opera-

tion borrowing, however, do not accord with this theory due to many factors, a study of which would have involved unusually complex calculations.

1937 in the amount of \$150,915,500, and estimates interest charges thereon at \$3,000,000; indicating an average interest rate of 1.987 percent.

The 1938 Executive Budget provides for redemption of 7 million of tax notes outstanding and to be issued; and appropriates \$2,000,000 for interest on all temporary debt. Assuming that 1937 average rates of interest apply, the charges on 7 million of tax notes @ 1.987 percent would be \$139,090. This would leave a balance of \$1,860,910 out of the 2 million dollar appropriation to meet interest payments for operation borrowing.

Capitalizing \$1,860,910 at 1.987 percent produces \$93,654,252—the amount that would be borrowed for operation purposes at the average interest rate. To this \$93,654,252 the 20 million balance in the reserve fund was added to obtain the *total* amount assumed to be borrowed, i. e., \$113,654,252. According to the report on "Tax and Appropriation Surplus and Deficiency Account" in the 1938 Executive Budget, the reserve fund balance is not a cash reserve, but merely a book credit. By adding the reserve fund balance in this way, 20 million would remain as a per-

TABLE 3
Operation Borrowing—Revenue Bills
(Figures in Millions of Dollars)

(1) Fiscal Year	(2) Accumulation of Reserve Fund	(3) Cost of Operation Payable from Levy	(4) Cash Required to Operate	(5) Balance to be Borrowed	(6) Interest Charges
1938	20.00	290.33	65.38	45.38	0.90
½-1939	26.57	146.21	32.92	6.35	0.12
1939-40	29.85	300.68	67.71	37.85	0.75
1940-41	36.87	315.09	70.95	34.08	0.67
1941-42	44.18	329.18	74.12	29.94	0.59
1942-43	51.96	342.15	77.04	25.08	0.49
1943-44	59.93	358.39	80.70	20.76	0.41
1944-45	68.05	364.88	82.16	14.11	0.28
1945-46	76.32	371.95	83.75	7.43	0.14
1946-47	84.75	378.66	85.27	0.51	0.01
1947-48	93.34	385.54	86.82	.....	.....

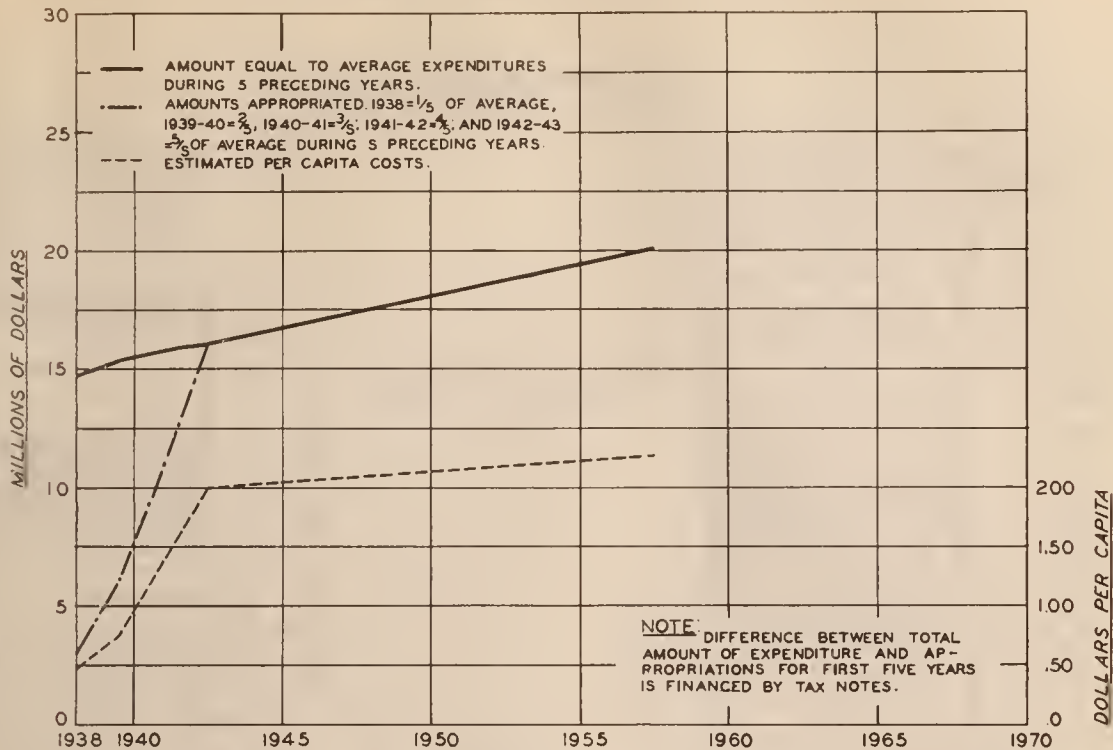
tion borrowing, however, do not accord with this theory due to many factors, a study of which would have involved unusually complex calculations.

In view of the relatively small interest costs of operation borrowing, the most up-to-date data available were studied. The Comptroller's Statement of "Debt Service Appropriations to be included in the 1937 Budget" reports total short-term debt outstanding, and to be issued, during

manent book credit and would not be available for future borrowing against the fund.

The staff prediction of total operating costs for 1938 and the total 1938 budget appropriations practically coincide at some 504.7 millions; this figure divided into \$113,654,252, the total assumed to be borrowed, indicates that 22.5 percent of all 1938 operating costs will be borrowed. On this basis, it was assumed that 22.5 percent of all future operating expenses will represent the "cash

ESTIMATED BUDGET APPROPRIATIONS FOR RECURRING CONTINGENCIES.
 REQUIRED UNDER SECTION 117 OF CHARTER
 BASED ON 1938 EXECUTIVE BUDGET APPROPRIATION AND PER CAPITA EXTENSIONS THEREAFTER.



MAYOR'S COMMITTEE ON CITY PLANNING
 NEW YORK CITY
 FINANCE STUDY

FIG. 16

TO PREPARE A MASTER PLAN
 W.P.A. PROJECT NO. 465-97-3-96
 DECEMBER 1937

ACCUMULATION OF TAX APPROPRIATION RESERVE FUND
 BASED ON BUDGET APPROPRIATIONS REQUIRED BY SECTION 132 OF CHARTER.

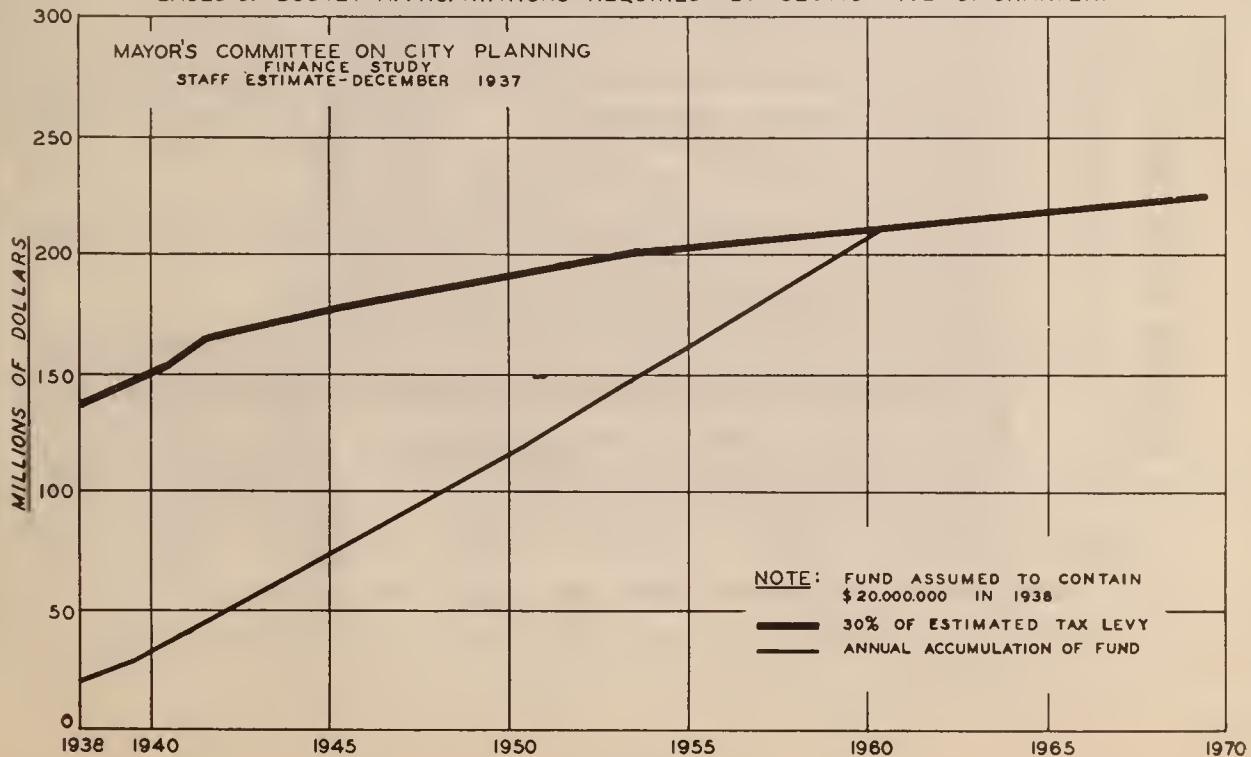
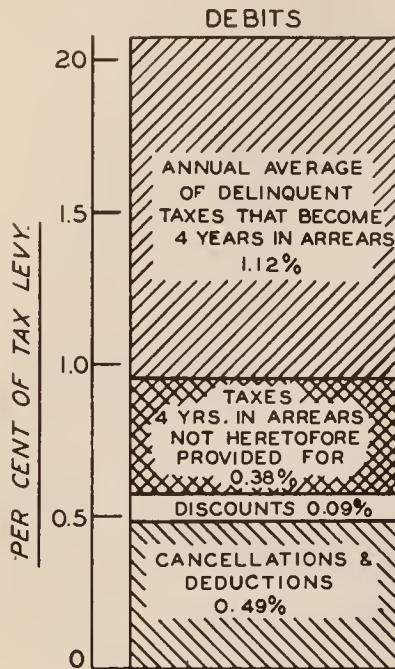


FIG. 17

TAX DEFICIENCY ACCOUNT SECTION 131 OF CHARTER



BASED ON DATA FROM
COMPTROLLERS' REPORTS
1920-1936 INCLUSIVE.

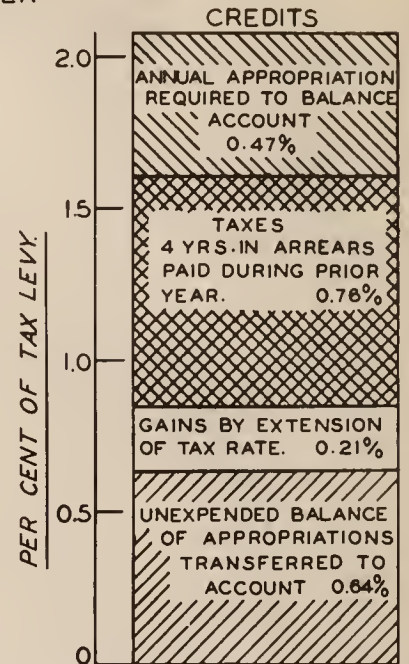


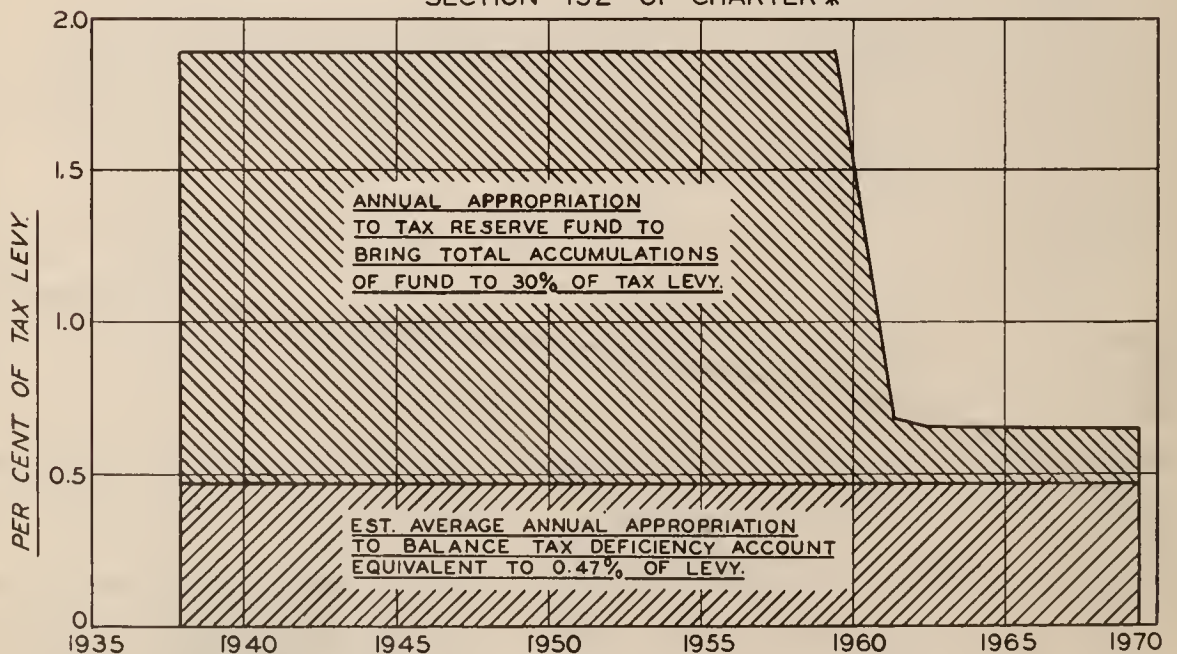
FIG. 18

MAYOR'S COMMITTEE ON CITY PLANNING
FINANCE STUDY
DECEMBER 1937

TO PREPARE A MASTER PLAN
W.P.A. PROJECT 465-97-3-96.

FA-13

TAX APPROPRIATION RESERVE APPROPRIATION TO TAX RESERVE FUND & TAX DEFICIENCY ACCOUNT. SECTION 132 OF CHARTER *



* TOTAL ANNUAL APPROPRIATION SHALL NOT EXCEED TWO PERCENT OF TAX LEVY.

FIG. 19

required to operate." Column (4) of Table 3 is therefore, 22.5 percent of the "cost of operation payable from levy"; and the interest in column (6) was calculated at 1.987 percent.

Special Revenue Bills

The Comptroller is authorized to issue special revenue bills during any fiscal year in anticipation of the collection of any taxes levied by the city to become due and payable during such year, other than taxes on real property, or in anticipation of moneys to be received from the state during such year, such sums as may be necessary to meet expenditures under the appropriations for such year to be paid from such taxes or such moneys. Special revenue bills must be redeemed out of the proceeds of the taxes or moneys in anticipation of the collection or receipt of which they were issued, and such taxes or moneys as collected or received shall be applied to the redemption of such special revenue bills or any obligations of the city issued in exchange therefor, until all of such special revenue bills or obligations shall have been redeemed. Section 248 of the charter.

It is apparent that special revenue bills will not be redeemed in future budgets, nor can moneys for such purposes be borrowed from the tax reserve fund. But appropriations to cover interest on special revenue bills will be included in the budget.

In order to determine the probable future interest charges on account of special revenue bills, 22.5 percent of the estimated revenue from special taxes and from "other" sources was taken as the amount of special revenue bills to be issued during each fiscal year. While the conditions affecting the collection of special taxes or other moneys are not identical with the conditions under which real es-

tate taxes are collected, this percentage was believed to furnish a reasonable basis for forecasting amounts of special revenue bills to be issued. Annual interest charges were calculated at the 1.987 percent average rate assumed for short term borrowing. Table 4, illustrating this method, contains part of the results of this analysis.

Reference to Table 3 will reveal that interest on revenue bills, plus the interest on special revenue bills shown in Table 4, totals \$1,860,910; the amount of interest assumed to have been provided in the 1938 Budget for operation borrowing.

Tax Notes

The Comptroller may, when authorized by the Board of Estimate, borrow during any fiscal year: so much of the amounts that may be necessary for the purposes and objects specified in Section 117, Item 5, as shall exceed the amounts appropriated therefor in the budget for such year; so much as may be necessary, but not more than 3/4 of one percent of tax levy, to provide for unforeseen expenses authorized by the unanimous vote of the Board of Estimate. Such sums shall be obtained by the issuance of tax notes, which shall be redeemed out of the tax levy for the fiscal year next succeeding the fiscal year of their issue, Section 249 of the charter.

Tax notes may also be issued for permanent improvements. However, with the exception of tax notes authorized prior to the 1938 Capital Budget, such financing is discussed under Capital Outlays. This phase of the finance study was concerned with borrowing necessary under Section 117; for miscellaneous contingencies; and tax notes authorized prior to 1938 for permanent improvements.

Borrowing under Section 117—The analysis of items under Section 117 revealed the amount of

TABLE 4
Operation Borrowing—Special Revenue Bills
(Figures in Millions of Dollars)

(1) Fiscal Year	(2) "Other" Revenue plus Special Taxes	(3) Amount to be Borrowed	(4) Interest Charges
1938	214.37	48.27	0.95
½-1939	109.83	24.71	0.49
1939-40	221.12	49.75	0.98
1940-41	224.92	50.60	1.00
1957-58	268.20	60.34	1.19

expenses not included in the budget during the first five years which are to be financed by tax notes. Table 5 shows by fiscal year the proportion of expenses provided for in the budget, the proportion and remaining amounts to be financed by tax notes, and the redemption and interest charges on these obligations. It will be seen that tax notes are redeemed in the budget of the fiscal year next succeeding the fiscal year of their issue. Interest

show the entire calculation, but tax notes issued during 1941-42 are redeemed with interest in the budget of 1942-43.

Tax notes to finance permanent improvements authorized prior to the 1938 capital budget presented a difficult problem. However, with 7 million of these obligations scheduled for redemption during 1938, it appears that approximately 11 million remain to be issued from total authorizations of

TABLE 5
Tax Notes Issued and Redeemed Under Section 117 of Charter
(Figures in Millions of Dollars)

Fiscal Year	Proportion Provided in Budget	Balance Financed by Tax Notes		Tax Notes Redeemed in Succeeding Fiscal Year	Interest at 1.98%
		Proportion of Total Cost	Amount		
1938	1/5	4/5	11.74 (1)	.....	.....
1/2-1939	1/5	4/5	5.98 (2)	11.74 (1)	0.233
1939-40	2/5	3/5	9.22 (3)	5.98 (2)	0.118
1940-41	3/5	2/5	6.28 (4)	9.22 (3)	0.183
1941-42	4/5	1/5	3.25 (5)	6.28 (4)	0.124
1942-43	5/5	.....	.....	3.25 (5)	0.064
1943-44	5/5	.....	.....	.....	.....

payments are included at time of redemption since these obligations are likely to be issued during the latter part of each fiscal year.

Miscellaneous Contingencies— In a study of this kind it was believed sound to make allowance for miscellaneous contingencies, such as an abnormal outlay for snow removal, or an unexpected increase in the city's share of assessable improvements. This allowance will also cover expenses, resulting from other emergencies, that exceed budget appropriations under Section 117, Item 5, and any unforeseen contingencies not provided for in the budget.

Accordingly, for each fiscal year one percent of predicted tax levy was taken as the amount that might be expected to provide a reasonable annual average for such contingencies. The resulting amounts for each fiscal year were included as tax notes to be redeemed with interest in the budget of the fiscal year next succeeding the year of their issue, as illustrated by Table 6 for a five-year period.

The 1938 Budget provides for the redemption of 18.75 million special revenue bills issued prior to 1938, which are included here because obligations issued for similar purposes will be replaced by tax notes under the charter. The table does not

1937 and 1938 capital budgets. Assuming that these improvements will be completed and that 4 million of tax notes would be issued and redeemed in the first six months of 1939, the balance of 7 million was supposed to be redeemed during the fiscal year 1939-40. Interest, calculated at the average rate of 1.987 percent, was also included in the respective budget estimates.

SERVICE CHARGES ON OUTSTANDING TERM DEBT

This phase of the Outgo study considers charges on the funded debt outstanding as of January 1, 1937, and additional term obligations authorized in capital budgets prior to 1938, which will require service charges when issued. These obligations fall into four types: corporate stock, serial bonds, serial certificates of indebtedness, and assessment bonds.

Although revenue from special assessments was expressly excluded from this study, interest on assessment bonds is payable from tax levy and, therefore, was included in estimates of debt service charges.

Corporate Stock

This type of bond is amortized by annual payments to a sinking fund and redeemed at maturity

TABLE 6
Tax Notes Issued to Allow for Miscellaneous Contingencies
(Figures in Millions of Dollars)

(1) Fiscal Year	(2) One Percent of Tax Levy to be Borrowed	(3) Tax Notes Redeemed During Succeeding Fiscal Year	(4) Interest at 1.987%	(5) Total Cost
1938	4.628 (1)	.....	.....	18.750*
½-1939	2.314 (2)	4.628 (1)	0.091	4.720
1939-40	4.939 (3)	2.314 (2)	0.045	2.360
1940-41	5.150 (4)	4.939 (3)	0.098	5.037
1941-42	5.478 (5)	5.150 (4)	0.102	5.252

* "old" type special revenue bills outstanding to be redeemed in 1938

from such fund. Before the extent of sinking fund payments could be determined, it was necessary to tabulate outstanding corporate stock according to date of issue, amount of issue and date of maturity. This information, as well as interest rates, was obtained from Comptroller's reports.

Under the charter, moneys of the several sinking funds may be invested in city, New York State or federal obligations, but such investments must earn not less than 3 percent per annum. In practice, sinking fund investments have generally returned more than the legal minimum, but it was believed unwise to compute payments on the assumption that future earnings will exceed the required percentage. Therefore, annual payments were estimated for sinking funds earning 3 percent, and interest was computed at known rates for each issue.

However, the tabulation shows the gradual decrease in amount of payments due to the maturity of certain issues of these bonds. ⁽⁹⁾

The 1937 and prior capital budgets authorized improvements which, when financed, will increase the corporate stock outstanding as of January 1, 1937. It appears from staff analyses that about 38 million of corporate stock will soon be issued to finance improvements authorized prior to 1937, and that an additional 37.625 million will be sold to pay for 1937 capital budget authorizations. It was assumed that this corporate stock will be issued as 40-year bonds and that 38 million will be outstanding on January 1, 1938, and 37.625 million on July 1, 1939. Annual sinking fund payments, on the basis of investments earning 3 percent, were calculated at \$503,971 for the former, and

TABLE 7
Annual Contributions to Sinking Funds On Corporate Stock Outstanding January 1, 1937
(Figures in Millions of Dollars)

Fiscal Year	Amount	Fiscal Year	Amount	Fiscal Year	Amount
1938	17.59	1944-45	15.15	1951-52	14.87
½-1939	16.96	1945-46	15.15	1952-53	14.76
1939-40	16.91	1946-47	15.13	1953-54	14.40
1940-41	16.71	1947-48	15.11	1954-55	13.74
1941-42	15.79	1948-49	15.08	1955-56	13.29
1942-43	15.42	1949-50	14.98	1956-57	12.77
1943-44	15.27	1950-51	14.93	1957-58	11.86

Table 7 contains the results of these estimates through the fiscal year 1957-58. The actual contributions are, of course, some thousands of dollars more than the decimal figures indicate.

\$499,009.16 for the latter issue.

⁽⁹⁾ See section on "Capital Outlay" for amount of debt outstanding.

Serial Bonds

Serial bonds which mature in equal annual installments also had to be tabulated according to date of issue, term, and amount of each issue outstanding as of January 1, 1937. From these tabulations the amounts of serial bonds maturing each year were determined, and interest was estimated at the going rates on the various issues.

Serial Certificates of Indebtedness, outstanding as of January 1, 1937, amounted to only 7.9 million, and since this type of obligation is redeemed in equal annual installments the payments are here included along with serial bond redemptions in Table 8.

In addition to corporate stock financing, the 1937 and prior capital budgets also authorized improvements to be financed by serial bonds. Staff analyses indicate that about 54.78 million of serial bonds authorized prior to 1937, and approximately

38.4 million authorized in the 1937 capital budget, remain to be issued. As was the case with corporate stock, it was supposed that 54.78 million of new serial bonds would be outstanding by January 1, 1938, and that 38.4 million will be added by July 1, 1939. It was further assumed that 35 percent of this new debt will be 10-year, and 65 percent 25-year bonds.

The date of issue and fiscal year in which redemption payments would be made are shown in Table 9 for these two groups of serial bonds. The 3.61 million annual installment on 54.78 million of bonds expected to be outstanding January 1, 1938, commences during 1939-40, and continues until the 10-year term issue is retired; after 1947-48, the annual installment of 1.48 million is for the 25-year issue. Similar results obtain for the 38.40 million of bonds assumed to be outstanding July 1, 1939.

The estimated interest charges, at rates fixed at

TABLE 8
Annual Redemption of Serial Bonds Outstanding January 1, 1937
(Figures in Millions of Dollars)

Fiscal Year	Amount	Fiscal Year	Amount	Fiscal Year	Amount
1938	* 33.71	1944-45	14.70	1951-52	11.81
½-1939	* 9.12	1945-46	14.10	1952-53	11.81
1939-40	* 32.55	1946-47	12.53	1953-54	11.80
1940-41	* 31.70	1947-48	12.49	1954-55	11.80
1941-42	* 30.05	1948-49	12.49	1955-56	11.81
1942-43	* 23.73	1949-50	12.50	1956-57	11.52
1943-44	22.34	1950-51	11.97	1957-58	11.54

* Includes redemption of Serial Certificates of Indebtedness

TABLE 9
Annual Redemption of Serial Bonds Authorized Prior to 1938 Capital Budget
(Figures in Millions of Dollars)

Fiscal Year	Annual Redemption:	
	of Bonds Issued Jan. 1, 1938	of Bonds Issued July 1, 1939
1938	(54.78)	.....
½-1939	.....	(38.40)
1939-40	3.61	.....
1940-41	3.61	2.53
1947-48	3.61	2.53
1948-49	1.48	2.53
1949-50	1.48	1.04

issue on corporate stock, serial bonds and serial certificates of indebtedness outstanding as of January 1, 1937, are given in Table 10. Interest computed at 4 percent per annum on new corporate stock and serial bonds, authorized prior to 1938, expected to be issued, is also shown.

BALANCE OF INCOME AVAILABLE FOR CAPITAL OUTLAY

The predicted costs of operation and maintenance, and of appropriations required by law, were added to estimated debt service charges for each

TABLE 10
Estimated Interest Charges on Corporate Stock Serial Bonds and Serial Certificates of Indebtedness
(Figures in Millions of Dollars)

Fiscal Year	Outstanding Jan. 1, 1937	New Issue	Fiscal Year	Outstanding Jan. 1, 1937	New Issue
1938	83.26	3.71	1948-49	71.65	4.56
1/2-1939	41.05	3.37	1949-50	70.18	4.43
1939-40	81.34	6.68	1950-51	70.27	4.32
1940-41	79.54	6.48	1951-52	69.55	4.22
1941-42	77.49	6.24	1952-53	68.25	4.12
1942-43	75.89	5.99	1953-54	66.59	4.02
1943-44	74.74	5.74	1954-55	63.47	3.92
1944-45	73.99	5.50	1955-56	61.36	3.82
1945-46	73.37	5.25	1956-57	59.01	3.72
1946-47	72.79	5.01	1957-58	54.35	3.62
1947-48	72.27	4.76			

The decimal figures are usually several thousands of dollars more than actual charges computed, but this table indicates the magnitude of interest payments required by existing funded debt.

Assessment Bonds

These obligations are issued to replenish moneys in the Street and Park Opening Fund and the Street Improvement Fund, and the proceeds used to finance assessable improvements. Special assessments levied on real property benefitted by such improvements are paid into one of the two funds, usually in several annual installments, and at maturity assessment bonds are redeemed from the fund on account of which such bonds were issued.

Forecasting interest charges on assessment bonds presented many practical difficulties. Therefore, the amounts of outstanding assessment bonds predicted in the Assessable Improvement Study, were assumed to represent the extent of such future debt.⁽¹⁰⁾ Interest due each year was figured at 3.5 percent, which has represented a general average rate for assessment bonds. The resulting estimates of interest charges are shown in Table 11.

(10) See section of this report on "Assessable Improvements."

fiscal year. The resulting amounts of Outgo were then subtracted from total revenues to obtain the balance of income available to finance new capital outlays.

These analyses indicated that some 14.2 million will be available in the fiscal year 1939-40 to finance such improvements as may be authorized in the nine months capital budget of 1938; and that a balance of about 25 million will be available during the fiscal year 1940-41 to finance 1939 capital budget authorizations.

Figure 20, showing total Outgo for the three 6-year periods, reveals that some 310 million will be available to finance capital outlays during the first 6-year period, about 545 million during the second, and approximately 730 million during the third period.

1938 Final Valuations as Related to this Study

Since the forecasts of assessed values were made early in 1937, it may be of interest to compare them with the final valuations as fixed for the year 1938. Table 12 shows changes in the final valuations for 1937 and 1938, as well as the predicted values for 1938, in millions of dollars—actual figures are slightly higher than the decimals shown. While the final real estate and total values increased by more than 81 and 50 millions respectively over 1937, special franchise valuations, as fixed by the State Tax Commission, decreased

TABLE 11
Estimated Interest Charges on Assessment Bonds Assumed to be Outstanding
(Figures in Millions of Dollars)

Fiscal Year	Bonds Outstanding	Interest	Fiscal Year	Bonds Outstanding	Interest
1938	93.66	3.27	1947-48	119.64	4.18
1/2-1939	92.80	1.62	1948-49	120.68	4.22
1939-40	98.13	3.43	1949-50	121.62	4.25
1940-41	106.80	3.73	1950-51	122.49	4.28
1941-42	112.54	3.93	1951-52	122.99	4.30
1942-43	114.25	3.99	1952-53	123.75	4.33
1943-44	115.22	4.03	1953-54	123.46	4.32
1944-45	116.19	4.06	1954-55	123.58	4.32
1945-46	117.34	4.10	1955-56	123.40	4.31
1946-47	118.45	4.14	1956-57	123.11	4.30

TABLE 12
1937 and 1938 Final Values, and Predicted Assessed Values for 1938
(Figures in Millions of Dollars)

	Final 1937	Final 1938	Change	Predicted 1938	Excess over 1938 Final
Real Estate	15,892	15,973	81	16,286	313
Special Franchises	707	677	30 (d)	742	65
Total	16,599	16,650	50	17,029	379
(d)—Decrease					

30.6 million. If the equalization rates used by the State Commission had corresponded with the City Tax Commission figures, special franchise would be increased by approximately 65 million; which amount is equivalent to the excess of predicted over final valuation for 1938.

Based upon expected population growth, a projection of the rent index curve, and size of family as compared with 1934, the "full" value of real estate was forecast at 19,160 million. The ratio of assessed to "full" value was predicted at 85 percent, which produced an estimated assessed value of 16,286 million for 1938. Table 12 shows this figure to be about 313 million above the final value of real estate, or 83.36 percent of "full" value instead of the expected 85 percent. The 313 million, together with the excess of estimated over final special franchise valuations, make the predicted total assessed value about 379 million greater than the 1938 final figure.

While the final assessed valuation for 1938 will also apply to the first six months of 1939, in accordance with the new charter, there will un-

doubtedly be a net increase in 1939 figures over 1938, due to a change in the taxable status of newly constructed and rehabilitated buildings completed by December 15, 1938, that are not on the 1938 assessment roll. The resulting increase for the first six months of 1939 will probably not coincide with the staff prediction, inasmuch as 1938 special franchise values will remain fixed until July, 1939.

The over-estimation of 1938 assessed valuations emphasizes one of the qualifications to which financial forecasts are subject. Although obviously liable to error, especially over short periods of time, these predictions furnish a sound comparative basis for examination of the city's probable financial resources. For example, the 1938 Executive Budget requires about 462 million from real estate taxes, which, levied on the final assessed value, will result in a slightly higher tax rate for 1938 than would have been necessary under the predicted valuation. Revenue from tax levy remains the same, regardless of the fact

that the final valuation is lower, and the actual tax rate higher, than was forecast for 1938. ⁽¹¹⁾

It will be recalled that the main objective of this study was to ascertain the city's probable ability to finance new permanent improvements. If future operating outgo should exceed estimated costs, the necessary revenues must be raised in order for the city to function, or if operating expenditures

can, by efficient management, be reduced below the predicted levels, then less revenue will be required. But in either case, the relative differences between total income and operating outgo during the three 6-year periods, may be expected to produce balances, available to finance capital outlays, in amounts that will be practically equivalent to those forecast.

Capital Outlay

Before ascertaining the amounts of new outlays that could be financed with the balance of income available for the purpose, it was necessary to establish a future debt limit and to determine the amount of new borrowing that would be possible thereunder. Based upon the hypothesis that the amounts of future capital outlays would be equivalent to new borrowing power, the succeeding step considered methods of financing such outlays in accordance with charter provisions, determined the costs thereof, and the effect of these expenditures upon the two percent tax limit. Then, having determined the amounts of capital outlays within the city's indicated financial resources, an eighteen-year program of expenditures was formulated.

BORROWING POWER

The State Constitution limits the indebtedness of New York City to 10 percent of the assessed value of taxable real estate, including special

franchises. ⁽¹²⁾ Under several court interpretations, all funded debt, land and contract liabilities, and corporate stock notes (which become bond anticipation notes under the charter) are included within the debt limit. But outstanding county bonds, water debt, a certain self-liquidating portion of rapid transit and dock debt, debt for fully self-liquidating improvements, city debt held by the sinking funds, budget appropriations for redemption of funded debt and sinking fund installments, and cash balances remaining from bond issues when used for debt payments, are excluded from the 10 percent limit.

Term Debt and Assessed Value

The difficulties involved in estimating future debt within the Constitutional limitation, were

(11) See "Capital Outlay" section of this report for the ratio of debt to assessed valuation.

(12) As amended in 1938, the State Constitution provides that, after January 1, 1939, the City's indebtedness shall not exceed 10 percent of the average assessed valuation of real estate, subject to taxation, as determined by the last completed assessment rolls and the four preceding rolls. The debt limit considered in this study is related to current assessed valuations, but it was not practicable to revise the estimates to accord with the average assessed value for the preceding five years.

TABLE 13
Ratio of Outstanding Term Debt to Assessed Valuation
(Figures in Millions of Dollars)

Year	Debt as of January 1	Assessed Value	Percent Debt of Value	Year	Debt as of January 1	Assessed Value	Percent Debt of Value
1921	1,126	9,972	11.3	1930	1,869	18,203	10.3
1922	1,219	10,249	11.9	1931	1,994	18,806	10.6
1923	1,241	10,596	11.7	1932	2,078	19,616	10.6
1924	1,225	11,148	11.0	1933	2,010	18,457	10.9
1925	1,344	11,901	11.3	1934	2,064	17,149	12.0
1926	1,413	12,997	10.9	1935	2,126	16,649	12.8
1927	1,491	14,539	10.3	1936	2,128	16,678	12.8
1928	1,632	15,845	10.3	1937	2,173	16,599	13.1
1929	1,741	17,133	10.2				

considerable, and, therefore, an exact application of the 10 percent limit was not attempted in this study. Term debt—Corporate stock and serial bonds outstanding as of January 1 each year—was tabulated and expressed as a percent of assessed value for the period 1921 to 1937 inclusive, with the results as shown in Table 13. Since assessment bonds (which were less than 5 percent of this debt), serial certificates of indebtedness issued for relief, corporate stock notes and a relatively small amount of general fund bonds were excluded, the tabulation reveals debt resulting mainly from past capital improvements. It is interesting to find that the average of this debt for the seventeen years was 11.3 percent of total assessed value; and that, while values and total debt increased during the late 1920's and early 1930's, the ratio decreased; but the ratio again climbed to even higher levels after the depression had forced assessed valuations down. See Figure 22. The past relation of debt to assessed value furnishes a partial guide to possible future amounts of new outlays, but the maturity of debt outstanding January 1, 1937, hereinafter referred to as "old" debt, also enters into the picture.

Maturity of "Old" Debt

The annual amounts of "old" debt maturing were readily obtained from estimates previously described under "Term Debt Service," and are given in Table 14 up to June 30, 1958. While nearly 40 percent of the present amount of "old" debt will have been retired, about 1,358 million

will still be outstanding some twenty years hence; Figure 21 illustrates graphically the total and per capita amounts of "old" debt estimated to be outstanding each year. Both Figure 21 and Table 14 suggest that new debt for future permanent improvements will be limited to some extent by the *rate* of maturity of this "old" debt.

Maturity of Debt Outstanding January 1, 1939

In the discussion of "Service Charges on Outstanding Debt," service was included to cover debt authorized in 1937 and prior capital budgets, which had not been issued by January 1, 1937, but which was assumed to be outstanding on January 1, 1939. Table 15 shows total resulting debt that would be outstanding as of January 1, 1939, with estimated annual maturities, commencing July, 1939. The retirement of these obligations, together with any future increases in assessed valuation will, of course, create additional borrowing power to finance new capital outlay. Reference to Table 14 will reveal that the issuance of debt authorized prior to the 1938 capital budget, is expected to increase outstanding debt by about 168 million to a total of more than 2,225 million on July 1, 1939. The actual amounts calculated are slightly higher than the decimals given in Table 15.

Future Debt Limit and Borrowing Power

The next step in measuring the city's ability to finance new capital outlays involved the determination of a future limit on funded debt and the amount of such outlays that could be obtained

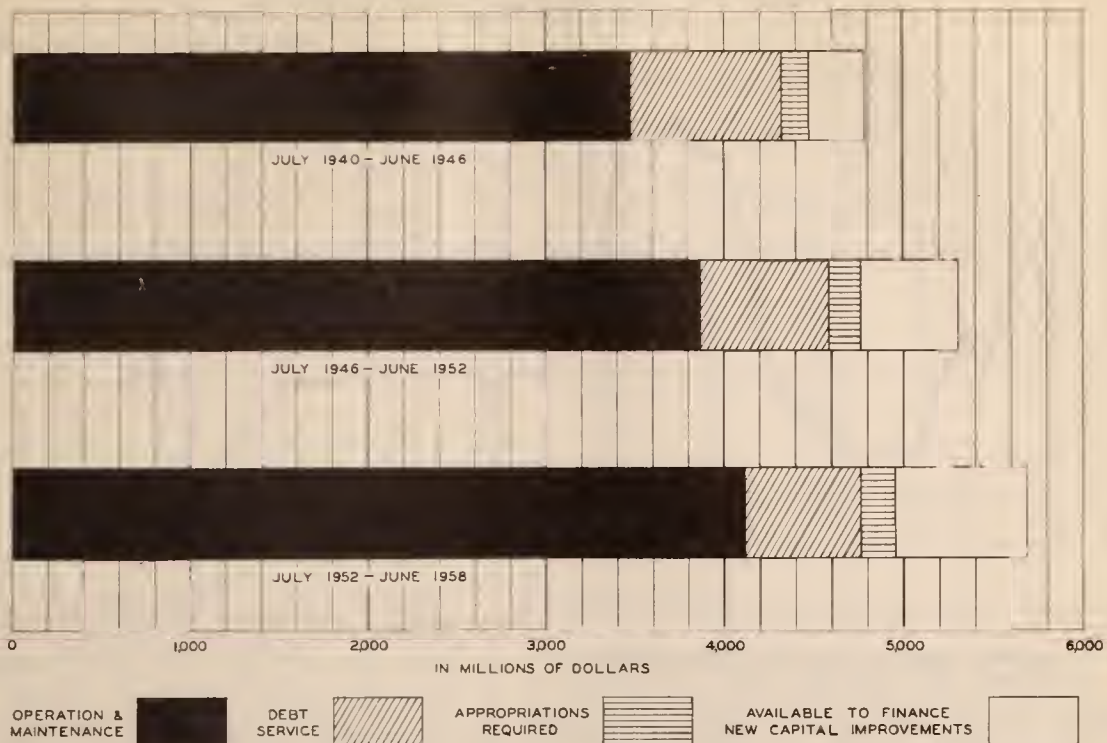
TABLE 14
Annual Maturity of "Old" Term Debt
(Figures in Millions of Dollars)

Fiscal Year	Outstanding	Maturity	Fiscal Year	Outstanding	Maturity
1-1-37	2,173	60	7-1-47	1,804	13
1-1-38	2,112	46	7-1-48	1,790	18
1-1-39	2,066	9	7-1-49	1,771	17
7-1-39	2,057	35	7-1-50	1,754	16
7-1-40	2,021	65	7-1-51	1,738	21
7-1-41	1,956	51	7-1-52	1,716	50
7-1-42	1,904	33	7-1-53	1,666	78
7-1-43	1,871	24	7-1-54	1,587	61
7-1-44	1,846	14	7-1-55	1,525	61
7-1-45	1,831	14	7-1-56	1,464	106
7-1-46	1,817	13	7-1-57	1,358	61

"old" debt—corporate stock and serial bonds (Actual amounts slightly higher than decimals)

OUTGO

ESTIMATES OF TOTAL OUTGO FOR THREE 6-YEAR PERIODS



MAYOR'S COMMITTEE ON CITY PLANNING
FINANCE STUDY
DECEMBER 1937

TO PREPARE A MASTER PLAN
WPA PROJECT NO. 465-97-3-96

FIG. 20

OUTSTANDING TERM DEBT

EXCLUSIVE OF ASSESSMENT BONDS
NEW YORK CITY

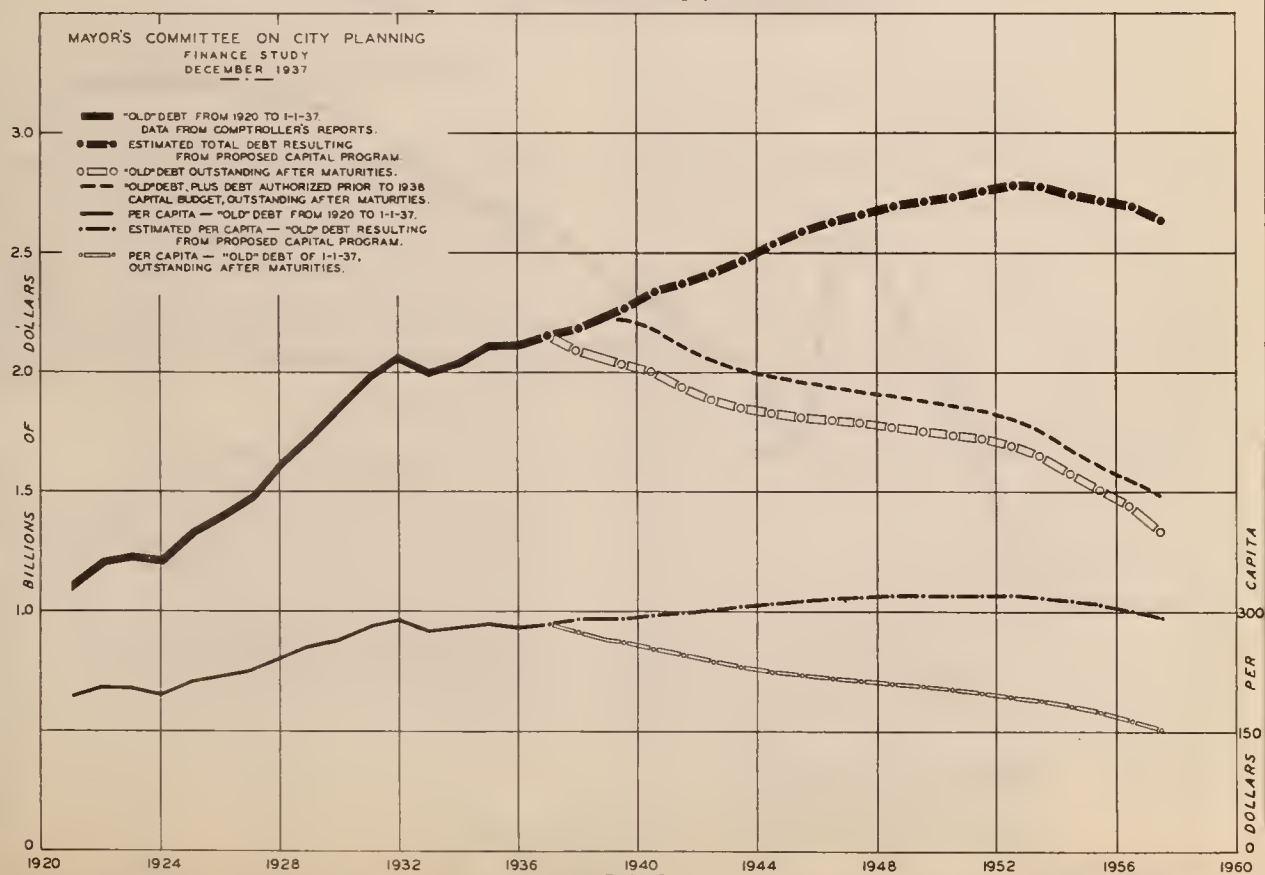


FIG. 21

TO PREPARE A MASTER PLAN
WPA PROJECT NO. 465-97-3-96

RELATION OF GROSS FUNDED DEBT TO ASSESSED VALUE EXCLUSIVE OF ASSESSMENT BONDS

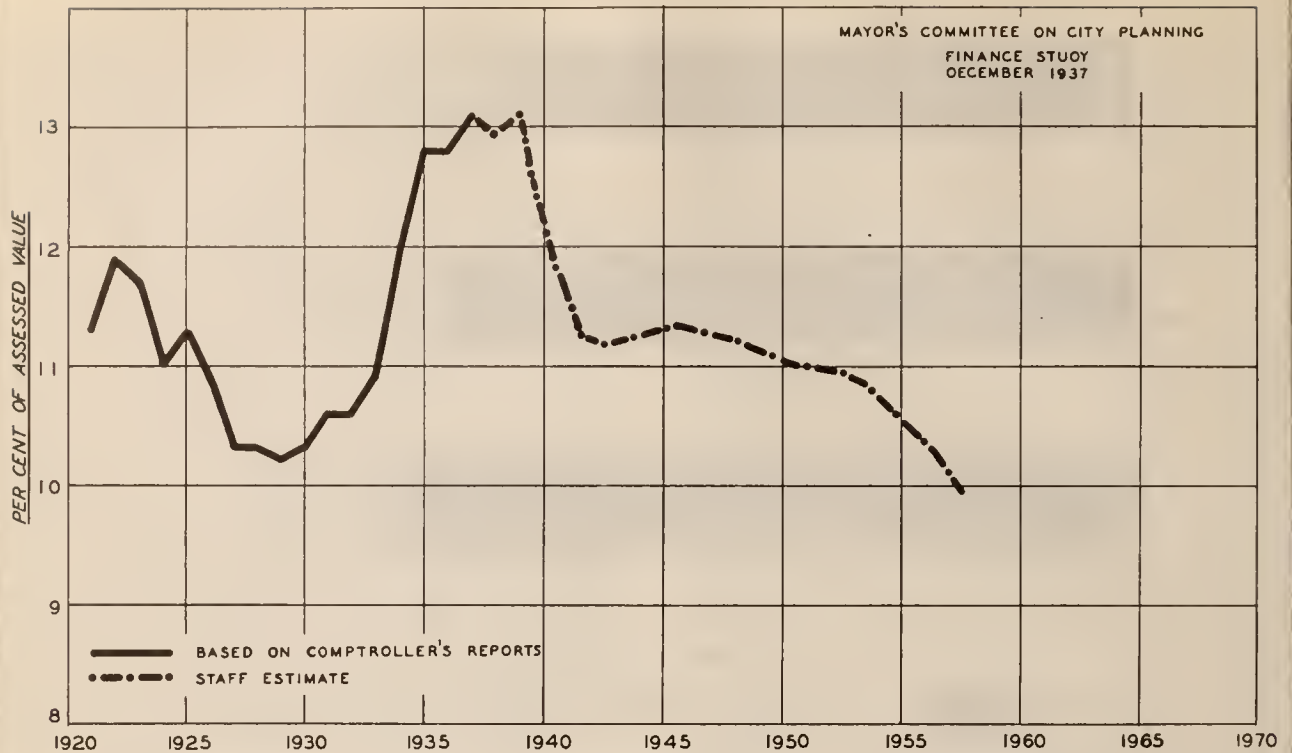


FIG. 22

TO PREPARE A MASTER PLAN
W.P.A. PROJECT NO. 465-97-3-98

DEBT SERVICE CHARGES ON FUNDED DEBT PROVIDED IN ANNUAL BUDGETS

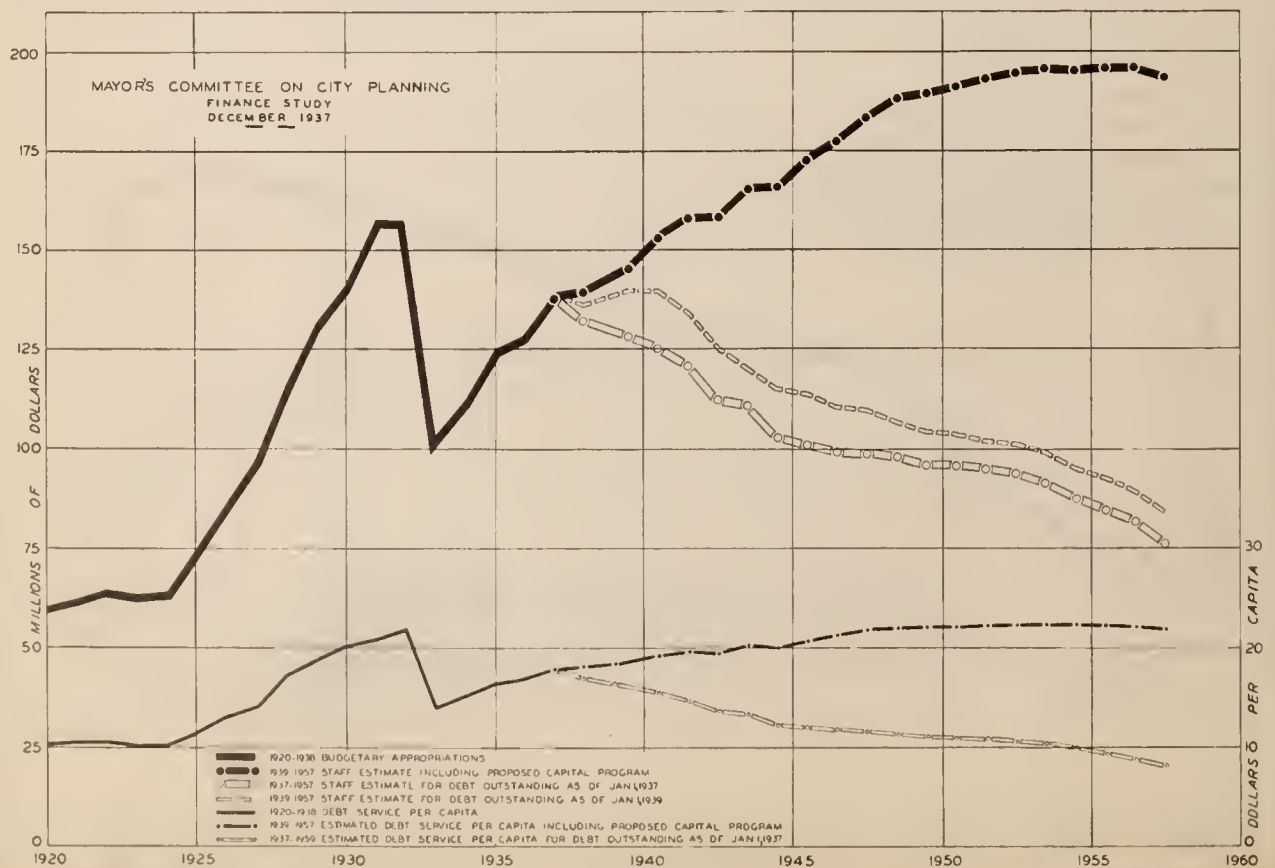


FIG. 23

TO PREPARE A MASTER PLAN
W.P.A. PROJECT NO. 465-97-3-98

TABLE 15
Maturity of Term Debt Assumed to be Outstanding on January 1, 1939
(Figures in Millions of Dollars)

Fiscal Year	Outstanding July 1	Annual Maturity	Fiscal Year	Outstanding July 1	Annual Maturity
1939	2,225	37	1948	1,906	21
1940	2,186	69	1949	1,882	18
1941	2,115	56	1950	1,864	17
1942	2,057	37	1951	1,844	22
1943	2,018	29	1952	1,820	51
1944	1,987	19	1953	1,768	79
1945	1,966	19	1954	1,686	62
1946	1,945	17	1955	1,622	62
1947	1,926	18	1956	1,558	107

under this assumed debt limit. Table 13 shows that while outstanding debt averaged 11.3 percent of assessed value during 1921 to 1937, the ratio was 13.1 on January 1, 1937. Debt retirement being relatively slow, it was not realistic to expect an immediate reduction in the 1937 ratio. Therefore, the future limitation was computed at 13.1 percent of assessed value, and the extent of *new outlays* was assumed to be the difference between the limit thus established and the amount of old debt still outstanding each year. The next step was necessarily based upon certain suppositions as to the manner of financing and the types of obligations that could be used to pay for the indicated new outlays.

FINANCING CAPITAL OUTLAYS UNDER THE CHARTER

After January 1, 1938, the new charter restricts the types of term obligations that may be issued to finance capital projects to serial bonds and corporate stock; and provides that no obligations of any nature or kind shall be issued except for the purposes for which obligations of such nature or kind are by the charter expressly authorized to be issued. ⁽¹³⁾

(13) Chapter 235 of the Laws of 1939, State of New York (amending the general municipal law, in relation to the maturities of obligations and the determination of the periods of probable usefulness of the objects and purposes of municipal bond issues) reduces the term of obligations for certain purposes as provided in the charter. It was not possible to determine the effect of these further limitations on the term of issue of obligations assumed hereinafter. Under the broad assumptions employed in this study, however, it is doubtful that a shorter term for certain bonds would materially affect the conclusions, especially since the major outlays will undoubtedly be made for purposes for which a long term bond may still be issued.

Corporate Stock

Corporate stock or serial bonds may be issued to finance the following types of permanent improvements: water supply, rapid transit or other public utility services; docks and wharfs; bridges or tunnels between boroughs; and for the acquisition of real property. Bonds issued for these purposes cannot exceed a 50-year maturity, in accordance with Section 243 of the charter. In addition to other specific limitations on maturities, Section 242 of the charter provides that no bonds shall be issued to mature later than the expiration of a term not exceeding ninety percent of the term of useful existence of the object for which such bonds are issued.

Serial Bonds

Serial bonds may also be issued for terms not exceeding the maturities noted, to finance: sewage disposal works, and permanent fireproof structures—35 years; permanent equipment in new structures—30 years; park equipment, incinerator plants, transmission systems and other permanent improvements—10 years. Section 244 further provides that, commencing July 1, 1938, not more than 98 percent of the amount authorized to be expended during the ensuing fiscal year for all purposes mentioned above shall be financed by serial bonds; and not less than 2 percent shall be financed by tax notes or cash; and in each succeeding year the maximum percentage of the amount to be expended for such purposes which may be financed by serial bonds shall be diminished by 2 percent of such amount over and above the percentage authorized for the preceding year, and the minimum percentage to be financed by tax notes or cash shall be increased

by 2 percent of such amount over and above the percentage required for the preceding year.

At this stage of the analysis it was impractical to attempt to define specific purposes for which new obligations might be issued. Therefore, *new outlays* (obtained as the difference between an assumed debt limit and outstanding debt) for each year were supposed to be financed as follows: 35 percent by corporate stock, and 65 percent by serial bonds and tax notes. Of this 65 percent balance, 2 percent was supposed to be tax notes for 1938 outlays, and the amount to be paid for by tax notes was increased by 2 percent each year thereafter. ⁽¹⁴⁾ On this basis there would be no serial bonds issued after 1988; this, of course, does not entirely accord with Section 243 of the charter, which permits either corporate stock or serial bonds for certain purposes. However, this analysis resulted in conclusions as to amounts of new outlays that could be financed, hereinafter described. The 35 percent factor represents the proportion of corporate stock issued during recent years, which has amounted to just over one-third of total corporate stock and serial bonds issued.

Cost of "Hypothetical" Outlays

Annual debt service on these hypothetical outlays was then estimated for corporate stock with a forty-year maturity and annual installments to sinking funds earning 3 percent; 35 percent of the serial bonds were supposed to be ten-year, and 65 percent twenty-five-year term, with redemption in equal annual installments, the first beginning two years after issue; interest was computed at 4 percent.

The results of this analysis indicated no difficulties for the first six years but conclusively demonstrated: (1) that if the total hypothetical outlays should be financed, the annual accumulation of service charges for debt, issued during the first 6-year period, would exceed the funds available during the second and third periods; (2) that as a result, the amounts of the hypothetical outlays for the second and third 6-year periods would have to be drastically reduced; (3) that the assumed debt limit (13.1 percent of assessed value) was not as restrictive in respect to new outlays as was the insufficiency of funds to finance such outlays; and, (4) that the recent trend of

financing about 15 percent of capital outlays by tax notes should be continued, until the charter requires a greater percentage, to keep service charges on new debt within the limits of available funds.

NEW OUTLAYS WITHIN THE CITY'S FINANCIAL RESOURCES

With the conclusions of the above analysis as a guide, the amounts of new outlays that could be financed by available funds were predicted for each 6-year period, and the total outlay for each period was spread equally over the six years.

Since the nine months capital budget for 1938 was to be made under provisions of law in force prior to January 1938, it was excluded from the first 6-year period. However, the probable amount of authorizations and the methods of financing are of interest in this study. Debt limitations and available funds indicate that 76.2 millions of new outlay can be undertaken during the last nine months of 1938.

For the first 6-year period, 1939 to 1944 inclusive, total outlays of 750.6 million, or 125.1 million per year are indicated; during the second period, 1945 to 1950 inclusive, not more than 589.2 million, or 98.2 million per year seem possible; and 693 million, or 115.5 million per year, is the extent of outlay indicated for the six years, 1951 to 1956 inclusive.

Financing New Outlays

Two studies were then made to determine the effects of the charter on financing predicted outlays, the first, Analysis I, on the supposition that 35 percent of annual outlay would be financed by corporate stock, and 65 percent by serial bonds and tax notes. In accordance with charter provisions, 2 percent of the amount in the 1938 capital budget that may be financed by serial bonds was supposed to be paid for by tax notes, and the amount of tax notes was increased by 2 percent for each calendar year thereafter, as shown in Table 16.

Analysis II, guided by conclusion four on the "Cost of 'Hypothetical' Outlays," was based upon 14.85 percent of annual outlays being financed by tax notes, and the remaining 85.15 percent by bonds. Of the bonds, it was assumed that 35 percent would be corporate stock and 65 percent serial bonds. Reference to Table 17 will reveal that by 1948, the charter would require a larger

⁽¹⁴⁾ This assumption places tax notes *within* the 10 percent debt limit. Prior to January 1, 1939, tax notes were not included in the 10 percent debt limit; but the State Constitution now permits the exclusion of debt service on tax notes, issued to finance permanent improvements, from the 2 percent real estate tax limit whenever the principal amount of such tax notes is included within the 10 percent debt limit.

TABLE 16
Financing New Capital Outlays—Analysis I
(Figures in Millions of Dollars)

Year	Total Outlay	Corp. Stock	Balance	Tax Notes		Serial Bonds	Total Bonds
				%	Amount		
1938	76.2	26.67	49.53	2	0.99	48.53	75.20
1939	125.1	43.78	81.31	4	3.25	78.06	121.84
1940	125.1	43.78	81.31	6	4.87	76.43	120.22
1941	125.1	43.78	81.31	8	6.50	74.80	118.59
1942	125.1	43.78	81.31	10	8.13	73.18	116.96
1943	125.1	43.78	81.31	12	9.75	71.55	115.34
1944	125.1	43.78	81.31	14	11.38	69.93	113.71
1945	98.2	34.37	63.83	16	10.21	53.61	87.98
1946	98.2	34.37	63.83	18	11.48	52.34	86.71
1947	98.2	34.37	63.83	20	12.76	51.06	85.43
1948	98.2	34.37	63.83	22	14.04	49.78	84.15
1949	98.2	34.37	63.83	24	15.31	48.51	82.88
1950	98.2	34.37	63.83	26	16.59	47.23	81.60
1951	115.5	40.42	75.07	28	21.02	54.05	94.47
1952	115.5	40.42	75.07	30	22.52	52.55	92.97
1953	115.5	40.42	75.07	32	24.02	51.05	91.47
1954	115.5	40.42	75.07	34	25.52	49.54	89.97
1955	115.5	40.42	75.07	36	27.02	48.04	88.47
1956	115.5	40.42	75.07	38	28.52	46.54	86.97

(Calculated amounts are slightly larger than the decimals shown)

amount of tax notes than is provided by Analysis II. Therefore, the supposed methods of financing under Analysis II were discarded after 1947, and the assumptions underlying Analysis I were employed for the years 1948 to 1956.

As revealed by the tables, Analyses I and II are not entirely consistent; while 15.15 million in tax notes would be required in 1948 under the 2 percent cumulative provisions of the charter as shown in Table 17, the necessary 22 percent of tax notes in Analysis I is only 14.04 million for 1948. These analyses also ignore exceptions to limitations upon the use of tax notes. Section 245 of the charter permits the issuance of serial bonds for any capital project costing more than \$20,000,000 notwithstanding the limitations contained in Sections 243 and 244, heretofore quoted, when approved by a three-quarters vote of the Board of Estimate.

On the basis of suppositions as to the specific purposes for which outlays are to be made, it would have been possible to refine these analyses. Such refinements, however, were not desirable at this stage for they would have fixed the amounts of

outlays for certain purposes which can be financed only by specific types of obligations. The staff had not attempted to lay out a capital program as yet, and nailing down the methods of financing to specific purposes would presuppose the relative urgency of certain types of projects prior to an investigation of the city's needs for such improvements.

Future Term Debt

The extent of new debt and maturities thereof was then estimated, employing the identical suppositions as to term of issue; and using the amounts of bonds suggested by Analysis II for the years 1938 to 1947, and the amounts of bonds obtained from Analysis I for the years 1948 to 1956. For the results of this estimate see Table 18. The first column, top line, gives the amount of debt, including bonds authorized prior to the 1938 capital budget, expected to be outstanding on January 1, 1939; for each fiscal year thereafter, figures in first column result from annual retirement of old and new debt, and in-

TABLE 17
Financing New Capital Outlays—Analysis II
(Figures in Millions of Dollars)

Year	Total Outlay	Tax Notes	Total Bonds	Corp. Stock	Serial Bonds	% Tax Notes	
						Provided	Required
1938	76.2	11.31	64.88	22.70	69.23		2
1939	125.1	18.57	106.52	37.28	69.23	21.1	4
1940	125.1	18.57	106.52	37.28	69.23	21.1	6
1941	125.1	18.57	106.52	37.28	69.23	21.1	8
1942	125.1	18.57	106.52	37.28	69.23	21.1	10
1943	125.1	18.57	106.52	37.28	69.23	21.1	12
1944	125.1	18.57	106.52	37.28	69.23	21.1	14
1945	98.2	14.58	83.61	29.26	54.35	21.1	16
1946	98.2	14.58	83.61	29.26	54.35	21.1	18
1947	98.2	14.58	83.61	29.26	54.35	21.1	20
1948	98.2	14.58(*)	83.61	29.26	54.35	21.1	22(*)
1949	98.2	14.58	83.61	29.26	54.35	21.1	24
1950	98.2	14.58	83.61	29.26	54.35	21.1	26

(*) 22% of Serial Bonds plus Tax Notes, equals 15.15 million tax notes.
(Calculated amounts are slightly larger than the decimals shown)

clude the amounts of new debt added each fiscal year. The next column indicates new debt assumed to be authorized in each capital budget and outstanding at the beginning of the fiscal year next succeeding, i. e., July 1; the third column contains estimated maturities of new debt only. For example, the 64 million new debt that would result from the 1938 capital budget is assumed to be outstanding July 1, 1939 and is included in the 2,290 millions; the 106 million from the 1939 capital budget is included in the 2,358 million debt outstanding July 1, 1940; etc.

Future Debt and Assessed Values

Table 18 also indicates the estimated total debt—corporate stock and serial bonds—that would result from the methods of financing new outlays employed in this study; Figure 21 shows the results graphically. From 2,235 million in 1939, term debt would rise gradually to a peak of 2,805 million in July 1952, and then decrease annually to 2,657 million by July 1957. The decline in the later years is due in part to a more rapid retirement of "old" debt, as shown on the chart, and in part to the pay-as-you-go provisions of the charter, which were found to become more restrictive by 1948 on the basis of Analyses I and II.

Figure 21 also shows term debt per capita, which increases by about 50 percent, from \$195 in 1921, to more than \$290 in 1932; and remained practically at this level up to 1937. The future debt, resulting from new outlays and old debt, would rise gradually to about \$320 per capita by July 1952, or only about 10 percent, and then decline to \$295 in July 1957. On the basis of expected population, the new outlays would produce relatively minor increases in total debt per capita up to 1952, and effect a reduction to present levels thereafter.

Figure 22 reveals the past relation of term, or funded debt to assessed valuation. Future debt, shown in Table 18, is also indicated graphically on Figure 22; the ratio would drop abruptly from 13.1 in 1939, to 11.3 percent of predicted assessed value in July 1942. With minor fluctuations thereafter, the ratio would decline to less than 10 percent by July 1957; which suggests that the methods of financing used in this study would produce a healthy reduction of outstanding debt as related to assessed valuation.

Service on New Term Debt

Annual service charges for debt resulting from new outlays, were calculated for corporate stock with a forty-year maturity and annual installments

TABLE 18
Term Debt Resulting from Suggested Financing of New Outlays.
(excluding assessment bonds)
(Figures in Millions of Dollars)

Fiscal Year	Outstanding July 1	New Debt		Fiscal Year	Outstanding July 1	New Debt	
		Amount	Maturity			Amount	Maturity
1939	2,235 (*)	64.	.....	1948	2,712	84.	41
1939	2,290	106.	2	1949	2,733	82.	42
1940	2,358	106.	7	1950	2,755	81.	42
1941	2,390	106.	11	1951	2,775	94.	43
1942	2,431	106.	16	1952	2,805	92.	44
1943	2,486	106.	21	1953	2,799	91.	44
1944	2,546	106.	25	1954	2,765	89.	45
1945	2,610	83.	30	1955	2,746	88.	46
1946	2,648	83.	33	1956	2,725	86.	47
1947	2,682	83.	39	1957	2,657	.....	.....

(*) Outstanding January 1, 1939

to sinking funds earning 3 percent; and for 35 percent of the serial bonds at ten-year, and 65 percent at a twenty-five year term, with redemption in equal annual installments, the first beginning two years after issue; interest was computed at 4 percent per annum. Table 19 reveals that payments to sinking funds would be relatively small as compared with the amounts required to redeem serial bonds. It should be remembered that, not only are the amounts of serial bonds issued larger in the earlier years, but that while interest on corporate stock must be paid each year on the full amount of the issue until the date of maturity, interest on serial bonds is paid only on the amount of bonds outstanding, which amount is reduced each year by the retirement of a portion of the principal. ⁽¹⁵⁾

Service on Total Term Debt

Estimated service on term debt is shown graphically in Figure 23; the chart gives charges on debt

⁽¹⁵⁾ The following calculation illustrates the relative costs of corporate stock as compared with serial bonds, for an issue in the amount of \$1,000,000 for 40 years with interest at 4 percent:

	Corporate Stock	Serial Bonds
Cost to redeem	\$ 530,496	\$1,000,000
Interest payments	1,600,000	840,000
Total costs at end of 40 years	\$2,130,496	\$1,840,000

This calculation is based on corporate stock redeemed by 40 annual payments of \$13,262.40 to a sinking fund earning 3 percent per annum, with interest at \$40,000 each year; serial bonds are redeemed in 39 equal annual installments of \$25,641.02 each, the first payment two years after issue—hence the amount of interest payments decrease each year, from \$40,000 the first year to \$1,025.65 in the fortieth year.

On this basis, financing an improvement by corporate stock would cost \$290,496 more than an issue of serial bonds, but in either case, the total costs of a million dollar improvement at

assumed to be outstanding January 1, 1939, as well as for "old" debt. The total annual charges, resulting from the additional service on debt for new outlays, would increase from about 148 million in 1939-1940, to a peak of nearly 197 million by 1953-54, and then decrease annually to about 194 million in 1957-58. While this may appear to be a heavy burden, the per capita charges for total debt service, also shown on Figure 23, are expected to rise gradually, from less than \$20.00 to \$22.55 per capita in 1943-44, which is only 40c. more than the 1932 peak! Thereafter, per capita charges would decline each year as a result of shorter bond maturities and larger proportions of outlays being paid for by tax notes. It should be noted also, that debt for *new outlays* will require only 55 percent of the total service charges during the fiscal year 1957-58.

Service on Tax Notes for New Outlays

Having estimated the service charges on funded debt for new outlays, it was necessary to determine

the end of 40 years is 1.8 to 2.1 times the original cost of the project.

With the same assumptions used above, a million dollar issue of either type of bond at 4 percent interest will vary in cost, depending upon the term of issue. As an illustration, the calculated costs at maturity are compared below for:

Term	Corporate Stock	Serial Bonds
5 Years.....	\$1,141,773	\$1,140,000
10 Years.....	1,272,305	1,240,000
20 Years.....	1,544,314	1,440,000
30 Years.....	1,830,579	1,640,000
50 Years.....	2,443,275	2,040,000

The shorter issue costs little more than the original improvement, with either type of bond; but with a longer term of issue, the cost is greater and serial bonds would effect a considerable saving over corporate stock.

TABLE 19
Service Charges on New Debt
(Approximate amounts of annual payments in millions of dollars)

Fiscal Year	To Sinking Funds	To Redeem Serial Bonds	For Interest	Fiscal Year	To Sinking Funds	To Redeem Serial Bonds	For Interest
1940-41	0.7	2.7	6.8	1949-50	4.8	41.4	33.9
1941-42	1.2	7.3	11.0	1950-51	5.2	42.3	35.6
1942-43	1.7	11.9	14.9	1951-52	5.7	42.8	37.2
1943-44	2.2	16.4	18.7	1952-53	6.2	43.2	39.2
1944-45	2.7	21.0	22.3	1953-54	6.8	44.1	41.2
1945-46	3.2	25.6	25.7	1954-55	7.3	44.9	43.1
1946-47	3.6	30.1	28.0	1955-56	7.8	45.5	44.9
1947-48	4.0	33.7	30.2	1956-57	8.4	46.7	46.6
1948-49	4.4	39.4	32.2	1957-58	8.9	47.8	48.2

the costs of that portion of new outlays assumed to be financed by tax notes. It was supposed that new outlays or such portion thereof as may be authorized for a given calendar year, would be completed within the said capital budget period, and that tax notes issued to finance such improvements would be redeemed in the expense budget of the fiscal year next succeeding the close of the capital budget period. Table 20 illustrates this method; the 11.3 million tax notes issued during the 1938 capital budget year are supposed to be redeemed with interest in the following fiscal year, commencing July 1, 1939; the issue of 18.5 million during the calendar year 1939 are included for redemption with interest in the fiscal year 1940-41; etc. Reference to this table will reveal that, during the second 6-year period, the amount of tax notes issued after 1948 increases each year—which is due to pay-as-you-go provisions of the charter as revealed by Analyses I and II. As in the case of other short-term debt, interest on tax notes was computed at 1.987 percent.

THE EXPENSE BUDGET

While the estimated debt service on new outlays, based on the methods of financing used in this study, could be met by the funds available, it was necessary to examine the relation of these costs to the expense budget and to determine their effect upon the 2 percent tax limitation.

The State Constitution limits the tax for city and county purposes, exclusive of term debt service charges, to 2 percent of the assessed value of taxable real estate. As interpreted in New York City,

the service on term debt is exempt, but temporary debt charges are included within the limit.⁽¹⁶⁾

In addition to that portion of operation expenses payable from the tax levy, the expense budget must include appropriations to the tax deficiency account and the reserve fund, expenses under Section 117, Item 5, of the Charter, and service on short-term debt; all within the 2 percent tax limitation.

Cost of Operation Within 2 Percent Limit

The first step in this investigation was the determination of that portion of operating and maintenance expenses payable from tax levy. As handled in the Income and Outgo studies, the sum of revenue from "other" sources plus special taxes, subtracted from total operating costs for any given year, is assumed to reveal the net amount of operating expenses to be met by the real estate tax levy. This method had, in fact, been employed to ascertain the amount of revenue bills that would be issued for operation borrowing; however, it was desirable to compare staff estimates with the 1938 Executive Budget as a test of the method.

The 1938 Executive Budget, when analyzed, shows the following information:

Expenses for which city must raise revenue	\$589,222,376
Estimated General Fund receipts	126,350,000
Balance to be raised by tax levy	462,872,376 (1)
Service on long-term debt	133,096,862 (±)
Balance within 2% tax limit	329,775,514 (*)

(16) See footnote 17 on page 121 for Constitutional amendments, made after the completion of this study, which affect debt service on tax notes, issued for permanent improvements, in relation to the 2 percent tax limit.

Staff Estimate of 1938 Executive Budget

Total cost of operation and maintenance	\$504,706,377
Revenue from "other" sources	174,961,171
Revenue from special taxes	39,409,650
Income, exclusive of tax levy	214,370,821
Portion of operating costs within 2% limit	290,335,556
Appropriations:	
Tax Reserve and Tax Deficiency	8,753,000 (2)
Item 5, Section 117	2,935,000 (2)
Service on operation borrowing	20,610,910
Service on tax notes	7,139,090
Total service on short-term debt	27,750,000 (2)
Total expenses within 2% tax limit	329,773,556 (*)
Long term debt service	142,434,132
Subway revenue	6,883,200
Balance of long-term debt service payable from tax levy	135,550,932 (‡)
Total to be raised by tax levy	465,324,488 (1)

That portion of operation costs payable from tax levy is, of course, included in the "Balance within 2 percent tax limit." The following analysis indicates the amount of operation costs to be raised by tax levy.

Staff Estimates for 1938—It should be recalled that these estimates include *all* costs with the exception of relief, and that revenue is on the same relative basis.

These analyses reveal that: the staff estimate of total expenses to be raised by tax levy, Figure (1) is about 2.452 million higher than the budget; that estimated term debt service, Figure (‡) is some 2.454 million more than the budget allowance; and that total expenses within 2% tax limit, Figure (*) are practically the same, although the staff estimate is \$1,958 lower than the budget. The excess for term debt service ac-

counts for most of the difference in total tax levy figures. This difference in term debt service charges is mainly due to staff calculations based on sinking funds earning 3 percent, while the budget allowance is the net amount needed, after deduction in accordance with the charter, from 1938 sinking fund contributions of the surplus earnings, over and above the required reserve. Inasmuch as estimated short-term debt service and other appropriations, noted (2), check with budget figures, that portion of operation costs within the 2 percent tax limit, as revealed by this analysis, is nearly equivalent to the actual amounts.

Therefore, the amount of operation costs to be raised by tax levy was obtained in like manner for future years and are shown on Figure 24. The costs of operation, by far the largest expense item

TABLE 20
Debt Charges for Tax Notes to Finance New Outlays
(Approximate Amounts in Millions of Dollars)

Year	Issued by End of Year	Redeemed After July 1	Interest	Year	Issued by End of Year	Redeemed After July 1	Interest
1938	11.3	.....	.....	1948	14.0	14.5	0.28
1939	18.5	11.3	0.22	1949	15.3	14.0	0.27
1940	18.5	18.5	0.36	1950	16.5	15.3	0.30
1941	18.5	18.5	0.36	1951	21.0	16.5	0.32
1942	18.5	18.5	0.36	1952	22.5	21.0	0.41
1943	18.5	18.5	0.36	1953	24.0	22.5	0.44
1944	18.0	18.5	0.36	1954	25.5	24.0	0.47
1945	14.5	18.5	0.36	1955	27.0	25.5	0.50
1946	14.5	14.5	0.28	1956	28.5	27.0	0.53
1947	14.5	14.5	0.28	1957	.....	28.5	0.56

within the 2 percent tax limit, are forecast to rise from about 300 million in 1939-40, to more than 430 million during the fiscal year 1957-58. As mentioned in the Outgo Study, the magnitude and expected rate of increase of these expenditures suggest the need for a continuation of efficient management if operation costs are to be held within reasonable economic limits.

Appropriations for Recurring Contingencies

The appropriations for such contingencies in accordance with Section 117, Item 5, of the Charter, are discussed under "Appropriations Required by Law." The full amounts are not required to be included in the budget until the fiscal year 1942-43, and the balances are financed by tax notes up to that time. Figure 24 also shows the estimated requirements under Item 5, Section 117; the annual rate of increase after 1942 being about the same as was forecast for operation costs.

Tax Appropriation Reserve

As shown on Figure 24, this item includes appropriations to the tax deficiency account, and to the tax reserve fund, in the amounts revealed as necessary by analysis previously reported under "Appropriations Required by Law." Being a function of total levy, the required amounts do not fluctuate to any appreciable extent.

Charges on Temporary Debt for Operation

The following items comprise operation borrowing as shown on Figure 24:

The analysis of operation borrowing, in anticipation of the collection of real estate taxes, indicated that the amounts to be borrowed will be reduced each year (by the accumulation of the tax reserve fund) to a point at which no public borrowing, and no service charges, will be required after the fiscal year 1946-47. See Table 3.

The amounts needed to be borrowed in anticipation of the receipt of revenue other than real estate taxes, not being affected by the reserve fund, were expected to increase annually, with a resulting modest rise in debt service charges. See Table 4.

Tax notes issued to finance that portion of costs under Section 117, not included in the budget prior to 1942-43, as well as for miscellaneous contingencies were assumed to be a function of levy

after 1942. See Tables 5 and 6. As a result of the combination of these three items, total service charges for operation borrowing would decline from about 16 million in 1939-40 to some 7.1 million by 1946-47, and gradually increase thereafter to only 8.1 million by 1957-58.

Tax Notes for Capital Outlay

The calculated debt service on tax notes assumed to be issued to finance capital outlays also comes within the 2 percent tax limit, and is shown on Figure 24. The amounts of tax notes that would be issued to pay for new capital outlays, given in Table 20, are reflected in debt service charges on the chart; it will be seen that after the fiscal year 1949-50, the amount of notes issued and of service charges thereon would increase each year due to the pay-as-you-go provisions of the charter.

Total Cost Within 2 Percent Tax Limit

Reference to Figure 24 will indicate that the sum of all expenses payable from real estate taxes, with the exception of service on long-term debt, is well within the 2 percent tax limit during the period covered. (For relation of past costs to the 2 percent tax limit see Figure 9.) It was concluded therefore, that new capital outlays, financed in the manner suggested in this study, could not only be paid for out of funds available, but that the resulting expenses would be within the 2 percent tax limit. However, the annual increase in the proportion of capital outlay costs that must be financed by tax notes after 1938 may be expected to result in either a reduction in total amount of outlay for permanent improvements or a forced deceleration in the expected rate of increase for operation costs, if debt service charges on tax notes issued to finance capital outlays must remain within the 2 percent tax limit.⁽¹⁷⁾

(17) Article VIII, Section 11, of the State Constitution, as amended at a general election in the Fall of 1938, provides that debt service charges on tax notes issued for permanent improvements after January 1, 1939, may be excluded from the 2 percent limit for taxes levied on real estate whenever the principal amount of such tax notes is included under the 10 percent debt limit. This permissive feature could be used to relieve the strain indicated by this study on future Expense Budgets without affecting the debt limit since tax notes were considered as part of the new borrowing power that would be available under the debt limit assumed in these investigations.

ESTIMATED BUDGET APPROPRIATIONS WITHIN THE 2% TAX LIMITATION

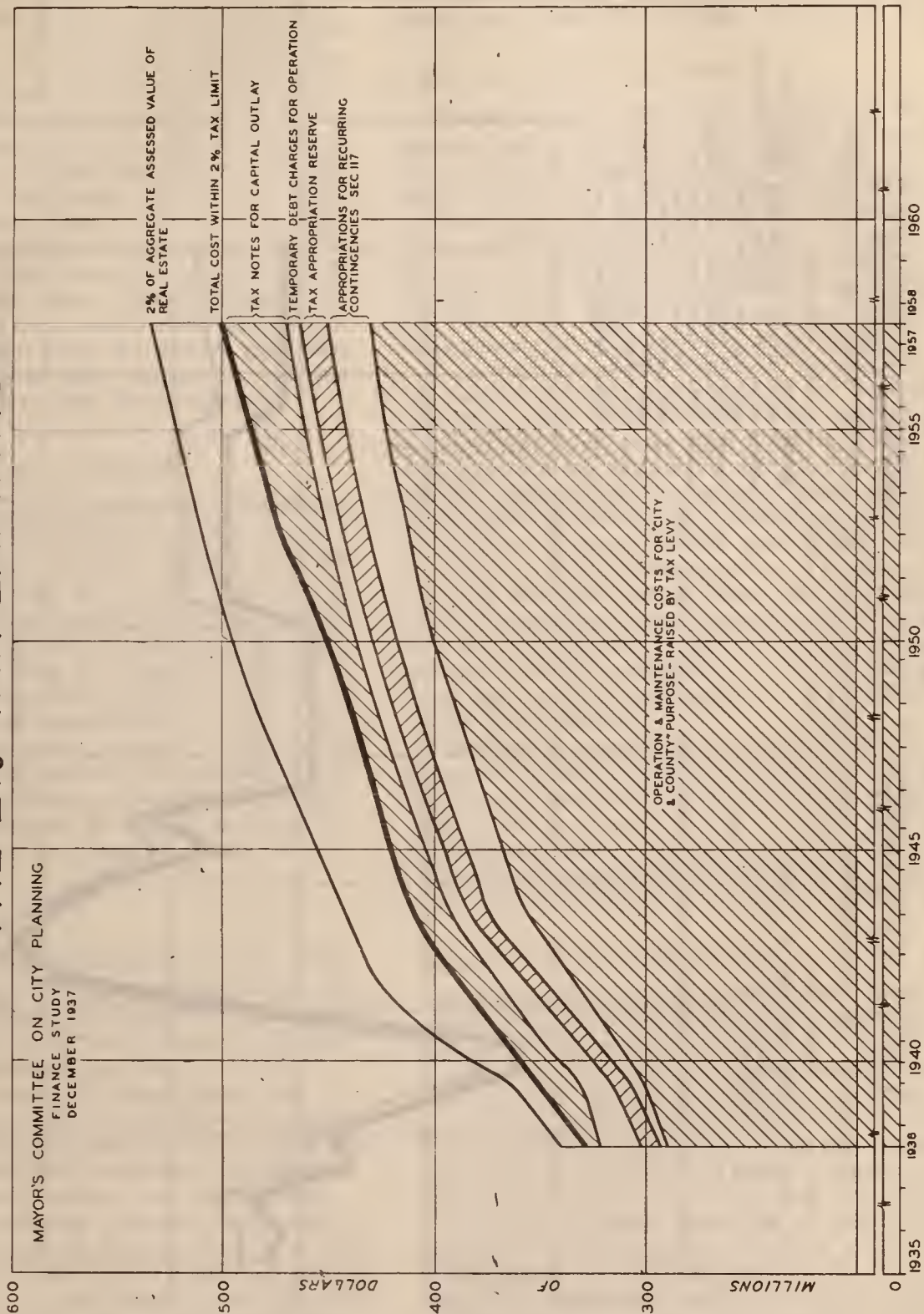


FIG. 24

TO PREPARE A MASTER PLAN
WPA PROJECT NO. 418-93.3-100

OUTLAYS FOR CAPITAL IMPROVEMENTS

EXCLUSIVE OF ASSESSABLE IMPROVEMENTS, SPECIAL FUNDS AND PWA GRANTS
NEW YORK CITY

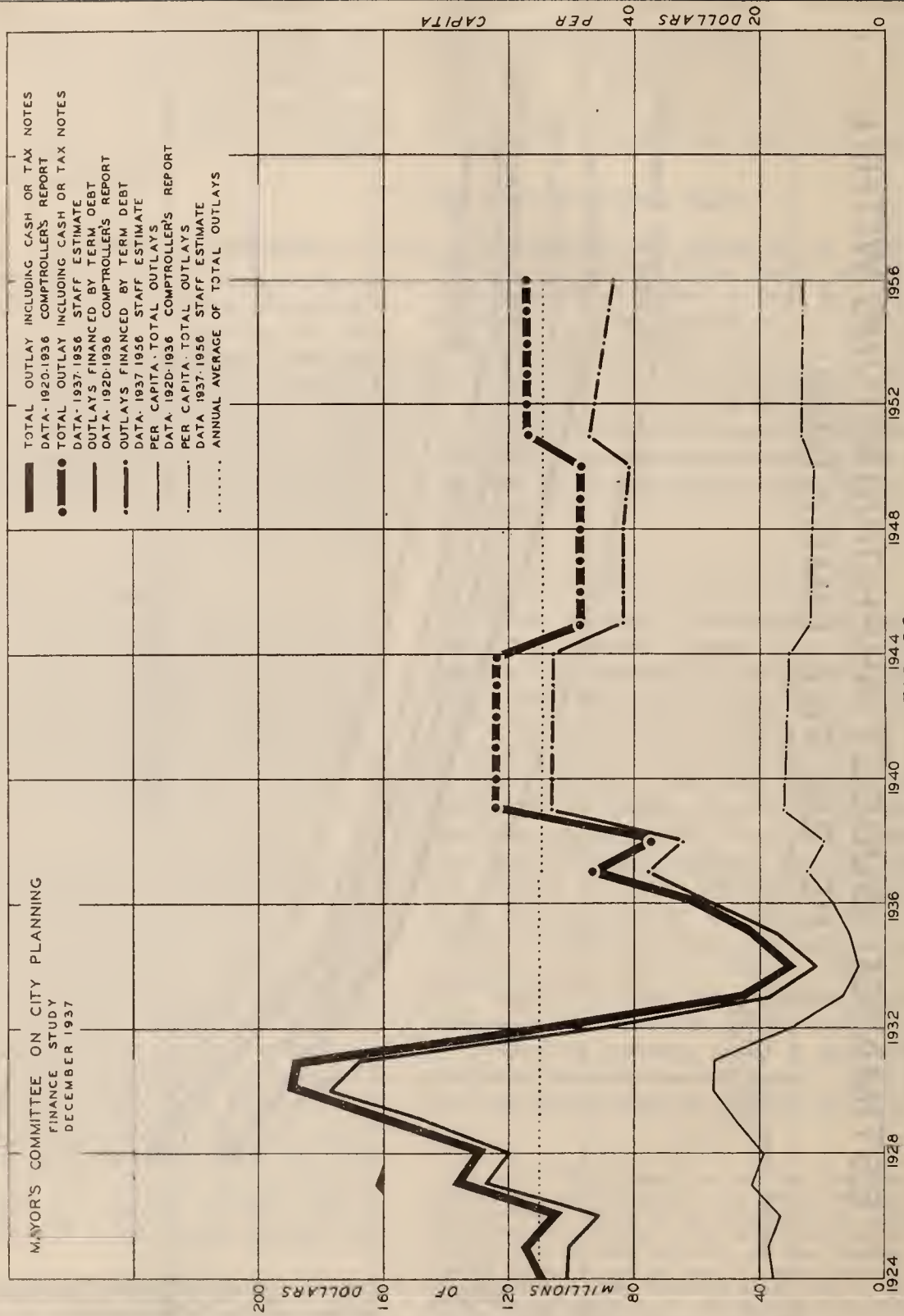


FIG. 25

TO PREPARE A MASTER PLAN
WPA PROJECT NO. 455-97-3-14

Service Charges on Term Debt

While term debt service is exempt from the 2 percent tax limit, such charges are included in the expense budget. As previously mentioned the staff estimate of term debt service for 1938, after deduction of subway revenue, was found to exceed budgetary appropriations. On the basis of this comparison it is likely that estimates of term debt service for future years may also exceed the actual requirements, and to that extent, these analyses would suggest that less revenue need be raised by real estate taxes than was forecast in the Income Study. Since a relatively minor decrease in revenue from sources other than the tax levy will more than offset the possible gain from over-estimating term debt charges, it was not deemed advisable to alter these estimates.

CAPITAL OUTLAY PROGRAM

Figure 25 shows graphically the amounts of capital outlay indicated by this study as within the city's financial resources. Reference to the chart will reveal that the average annual outlay for the nineteen-year period, 1938-1956, would be nearly equal to the annual average for the years 1924-1937; also that the suggested amount of outlay per capita would be generally less than the per capita amounts expended prior to 1932. The total amounts of outlay for each 6-year period, and the amounts assumed to be financed by bonds and by tax notes, as well as the effects of the pay-as-you-go provisions of the charter, as interpreted in this study, are also shown by Figure 25.

Past Outlays

Past capital outlays financed by city funds, graphically shown by Figure 25, have been subject to an apparently erratic policy, which would indicate the lack of an orderly long-term program. This is not intended in any sense as criticism; in boom periods mounting taxable values and general optimism naturally encourage more extensive outlays. The forced contraction after prosperity has been succeeded by depression inevitably produces the ups and downs in the outlay curve.

Paralleling increased prosperity, total outlays went generally up from about 110 million in 1924 to a peak of some 190 million in 1930. Expenditures in 1931 were nearly equal to 1930, but with the economic recession, the outlay curve fell precipitously to a low of 35 million by 1934. Although there has been a subsequent increase to

about 95 million as authorized by the 1937 capital budget, expenditures since 1932 have been below the fourteen-year average. See Figure 25.

Reservation of Borrowing Power

This experience of New York City reflects the general conditions that obtained throughout most of the country during the depression, when the drastic decline in municipal outlays could not be made up by greatly expanded federal public works. While capital outlays are not thought of as prime factors in employment, it is believed desirable to distribute such annual expenditures more evenly not only in the interest of economy and orderly development, but as a stabilizing economic force.

If projects that can be reasonably delayed during prosperous times were postponed, the reserved borrowing power could be used during depression years, assuming of course, that a fall in assessed valuations did not destroy the margin of debt incurring power. Only the more essential public works need be carried out in normal times under a long-term program. Capital projects scheduled in order of their relative urgency in a six-year program, subject to annual review and extension, may be rescheduled when changed circumstances warrant—the program could be enlarged during periods of severe unemployment or curtailed during boom years, but not at the expense of projects vital to the public welfare.

Thus related to economic conditions, capital outlays could be used to relieve unemployment and to give the city any advantage of savings that usually result from lower costs during a marked decline in business activity. Obviously such an arrangement will not prevent, but may be one of the means that will lessen, the effects of the business cycle.

Suggested Capital Outlay Program

Such possibilities suggest the desirability of withholding a portion of the outlays found to be within the financial resources of the city, so as to preserve a cushion of debt incurring power which could be used to expand outlays during periods of depression. Although there is no magic in the number, it was believed that ten percent of the new bonded debt for future capital outlays might be so reserved. This would amount to approximately 64 million for the first, 50 million during the second, and 54 million for the third 6-year period; or a total of 168.2 million for eighteen years. This amount might be considered too small or too large, depending upon the point of view, but it would have been quite handy had it been available in 1933 in the form of credit.

TABLE 21
Capital Outlay within the Financial Resources of the City and A Suggested Program for Capital Outlays
(Figures in Millions of Dollars)

Year	Tax Notes	Bonds	Total Outlay Possible	10% of Bonds	90% of Bonds	Total Outlay Program
1939	18.57	106.52	125.1	10.65	95.87	114.44
1940	18.57	106.52	125.1	10.65	95.87	114.44
1941	18.57	106.52	125.1	10.65	95.87	114.44
1942	18.57	106.52	125.1	10.65	95.87	114.44
1943	18.57	106.52	125.1	10.65	95.87	114.44
1944	18.57	106.52	125.1	10.65	95.87	114.44
6-Year Total	111.46	639.13	750.6	63.91	575.22	686.68
1945	14.58	83.61	98.2	8.36	75.25	89.83
1946	14.58	83.61	98.2	8.36	75.25	89.83
1947	14.58	83.61	98.2	8.36	75.25	89.83
1948	14.04	84.15	98.2	8.41	75.73	89.77
1949	15.31	82.88	98.2	8.28	74.59	89.91
1950	16.59	81.60	98.2	8.16	73.44	90.03
6-Year Total	90.24	498.95	589.2	49.89	449.05	539.30
1951	21.02	94.47	115.5	9.44	85.03	106.05
1952	22.52	92.97	115.5	9.29	83.67	106.20
1953	24.02	91.47	115.5	9.14	82.32	106.35
1954	25.52	89.97	115.5	8.99	80.97	106.50
1955	27.02	88.47	115.5	8.84	79.62	106.65
1956	28.52	86.97	115.5	8.69	78.27	106.80
6-Year Total	148.64	544.35	693.0	54.43	489.91	638.56
18-Year Totals	350.35	1,682.44	2,032.8	168.24	1,514.19	1,864.55

Table 21 shows the amounts of new outlays within the city's financial ability, and the amounts suggested for an eighteen-year capital program. The first column contains the amounts of tax notes; the second column gives the new bonded debt; and the third column shows the total outlay possible. In the fourth column are shown 10 percent of new bonds, which it is proposed be reserved; the fifth column contains the amounts of new bonded debt suggested; and the last column gives the total outlay that could be financed by tax notes, and the suggested new bonded debt. Reference to Table 21 will show that the suggested outlays are distributed evenly over each 6-year period, although there are minor fluctuations in the third period due to the methods used in this calculation.

While the suggested program is some 168 million less than the total amount of capital outlay found to be possible for these eighteen years, it would not alter the estimates of service charges on tax notes. But it would effect a reduction in estimated

service on new term debt.

The suggested program does not include any attempt to predict the dates of fluctuations in the business cycle.⁽¹⁸⁾ It rather assumes that some time during the next eighteen years it may be necessary to utilize the reserved debt as a stabilizing factor. Therefore, no analyses were made to determine service charges on the 1,514 million new debt, nor of its effect upon the ratio of total outstanding term debt to assessed values.

Without discussing all implications of the suggested program, it should be remembered that withholding ten percent of the new debt would reduce

(18) The 1938 Constitutional amendments which after January 1, 1939, limit the city's debt to 10 percent and the tax upon real estate to 2 percent of the average assessed valuation (of real estate subject to taxation) for the preceding five years, will tend to soften the effects of business changes, as reflected in assessed values, upon the city's fiscal operations. The desirability of a reserve of debt incurring power, however, still remains as is indicated in reports of the City Planning Commission and in recent "debt limit" statements of the Comptroller.

the tax levy predicted in the Income Study and, consequently, the basic tax rate. However, if the 64 million reserved during the first six years should be expended in a single year, for example, during 1945, the basic tax rate for the succeeding years would be increased by several points more than would have resulted from an even distribution of this 64 million over six years. And if the 64 million so reserved should be expended in 1945, the resulting total outstanding term debt would be only

slightly higher in relation to assessed value than the debt ratio produced by spreading 64 million expenditures evenly over the preceding six years and retiring a portion of the serial bonds each year.

It was concluded that, in general, the more urgent needs of the city could be financed under the suggested program, and that the reservation of borrowing power is not only a sound policy, but is deserving of serious consideration.

Assessable Improvements

Up to this point, the financing of assessable improvements has not been considered, although estimates of interest charges on assessment bonds were included in the Outgo Study. However, many of the city's physical needs, disclosed by other major planning studies of the Mayor's Committee staff, properly fall into the class of assessable improvements.

Section 291 of the charter defines an assessable improvement as "any public betterment involving either a physical improvement or the acquisition of real property for a physical improvement consisting in, including or affecting (a) streets and parks; (b) bridges and tunnels within the jurisdiction of a borough president; (c) receiving basins, inlets and sewers, including intercepting sewers, plants or structures for the treatment, disposal or filtration of sewage, including grit chambers, sewer tunnels and all necessary accessories thereof; (d) the fencing of vacant lots and the filling of sunken lots; any part of the cost and expense of which is authorized by law to be paid directly or indirectly out of the street and park openings fund or the street improvement fund."

The term "street" is further defined as "street, avenue, road, alley, lane, highway, boulevard, concourse, parkway, driveway, culvert, sidewalk, crosswalk, boardwalk and viaduct, and every class of public road, square and place, except marginal streets."

A reference to the charter definition of a capital project (Section 211) and the limitations on the purposes for which serial bonds may be issued (Section 244) will reveal that certain types of the improvements specified in Section 291 may be designated as either capital projects or assessable improvements, depending upon public policy. While the Planning Commission is required to pass upon all assessable improvements the estimated cost of which exceeds ten thousand dollars, the charter

expressly excludes such improvements from the capital budget.

Assessable improvements presented a peculiar problem for study, because of the revolving character of the two funds set up to finance such improvements pending the collection of assessments, and because of the practical difficulties in attempting predictions of the exact nature or cost of purely local betterments that may be proposed in any one or all of the twenty-four local improvement districts of the city.

PAST EXPENDITURES

The workings of the revolving funds are illustrated in Table 22 by the relation between expenditures, assessments confirmed, and the amounts of assessment bonds outstanding.

While annual expenditures have varied from 14 to 78 percent of bonds outstanding, the average amount spent during the years 1926-1936 was 46.4 percent of outstanding bonds. Since 1932, assessments confirmed have decreased both as to amounts and as a ratio of bonds outstanding, but have averaged 37.3 percent of bonds during 1929-1936. In the few years for which data were available, assessments confirmed have exceeded expenditures, with the exception of 1930, 1931 and 1936. However, assessments confirmed averaged 106.6 percent of expenditures in the period 1929-1936.

While there were variations from year to year of total assessments confirmed during 1929-1936, 58.7 percent was charged to local areas on the basis of benefits, 15.9 percent was charged to boroughs, and 25.3 percent was spread over the entire city. Land acquisition accounted for 52.1 percent of total assessments confirmed, sewers 23.3 percent, highways 24.5, and the balance of 0.1 percent was for miscellaneous purposes.

TABLE 22
Assessment Bonds, Expenditures and Assessments Confirmed
(Figures in Millions of Dollars)

Year	Bonds Outstanding January 1	Expenditures		Assessments Confirmed		
		Amount	% of Bonds	Amount	% of Bonds	% of Expenditures
1926	60.13	38.97	64.8	(No data available)		
1927	59.97	39.26	65.5			
1928	59.97	46.82	78.2			
1929	82.64	55.05	67.9	61.38	74.3	111.5
1930	77.64	44.49	57.3	27.29	35.2	61.3
1931	76.14	45.06	46.1	27.33	35.9	60.6
1932	91.37	41.60	45.6	51.74	56.6	124.4
1933	96.87	17.27	16.4	32.29	33.3	187.0
1934	96.87	26.06	26.9	29.05	30.0	111.5
1935	99.07	13.87	14.0	21.00	21.2	151.4
1936	94.07	25.85	27.4	11.57	12.3	44.8

Total Improvements and Assessment Funds

The relation of expenditures from the revolving funds to total outlay for all permanent improvements is indicated in Table 23 for the years 1924-1936. As might be expected, the proportion of expenditures paid from assessment bonds has varied from year to year, but was within the range of 16.3 to 44.1 percent of total outlay. While total outlays averaged 148.24 million per year, the amount paid from assessable improvement funds averaged 34.79 million or 23.5 percent of total expenditures. Total outlays shown in the table include payments from special funds, as well as from assessment bond funds, and, therefore, are not directly comparable with the data given in Figure 25.

CHARTER PROVISIONS

The two existing funds will be discontinued after all operations in connection with improvements authorized prior to January 1, 1938, have been completed. The charter establishes, as of January 1, 1938, a new street and park openings fund, and a new street improvement fund, each of which shall consist of the proceeds of the sale of assessment bonds, all collections of special assessments, and all other accounts lawfully payable thereto.

Assessment bonds may be issued to meet the expenditures payable from the street and park openings fund or the street improvement fund for the payment of which the monies available in either such funds are insufficient, but the amounts of such bonds shall not exceed the amount of assess-

TABLE 23
Total Outlays for Permanent Improvements and Amounts Paid from Assessment Bond Funds
(Figures in Millions of Dollars)

Year	Total Outlays	Assessment Bonds		Year	Total Outlays	Assessment Bonds	
		Amount	% of Total			Amount	% of Total
1924	133.25	21.74	16.3	1931	233.81	45.06	19.3
1925	153.07	36.35	23.7	1932	152.05	41.60	27.4
1926	146.40	38.97	26.6	1933	65.65	17.27	26.3
1927	177.69	39.19	22.1	1934	59.07	26.06	44.1
1928	181.96	46.82	25.7	1935	60.54	13.87	22.9
1929	218.22	55.05	25.2	1936	109.04	25.83	23.7
1930	236.37	44.49	18.8	Total	1,927.18	452.39	23.5

ments uncollected and a lien upon lands assessed, of awards confirmed upon which assessments remain to be imposed and of payments on account of work completed for which assessments remain to be imposed. Section 250 of the charter also provides that assessment bonds issued shall not exceed a maximum term of ten years; that the proceeds of the sale of all assessment bonds shall be paid into the fund on account of which the bonds were issued, and all such bonds shall be redeemed from such fund.

Assessable improvements confirmed cannot exceed one-half of the fair value of property benefitted (Section 310). Costs may be apportioned between the property benefitted and one or more boroughs or the entire city, depending upon the type of improvement and the area of benefit (Section 300).

Section 315 of the charter also provides that "for the purpose of computing assessments upon property benefitted by an assessable improvement all property within the area of benefit, although otherwise exempt by law from such assessment, shall be included in such assessment". The assessments computed on such exempt property, as well as assessments upon city property, shall be payable by the city.

These and other specific requirements in the charter will doubtless better the operations of the assessable improvement funds, tend to reduce the amounts of uncollectable assessments, and limit new assessment debt in the future.

OUTSTANDING ASSESSMENT BONDS

Assessment bonds, chargeable to the city's debt limit, were shown in the Capital Outlay Study to have been less than 5 percent of other term debt outstanding during the period 1926 to 1937. Table 24 reveals that during the same years the ratio of assessment bonds to assessed value fluctuated within a narrow range, but rose from 0.46 percent in 1926 to 0.55 percent by 1937. It is interesting to note that since 1926, the amount of assessment bonds outstanding increased by about 30 million, to 91.2 million on January 1, 1937. (See also Figure 26.)

Since assessments confirmed and the amount of bonds issued depend to some extent upon assessed values, the close relationship between assessment bonds and assessed values suggested an approach to estimates of future amounts of bonds that may be outstanding.

Future Assessment Bonds

Accordingly, it was assumed that the amount of assessment bonds outstanding in the future would

continue to bear a definite ratio to assessed values, but that this ratio would decrease by 0.005 percent per annum due to charter provisions previously outlined herein.

The results of estimates based on these suppositions, given in Table 25, are also shown graphically by Figure 26. On this basis, the amount of outstanding bonds would rise from 93.6 million in 1938, to a peak of 123.7 million by July 1952, but would thereafter commence an annual decline as a result of the decreasing ratio. The per capita amounts of outstanding assessment bonds would follow much the same course. Figure 26.

FUTURE EXPENDITURES

Analysis of the figures in Table 22 reveals that between 1926 and 1936, past expenditures for assessable improvements averaged 46.4 percent of assessment bonds outstanding. If future expenditures should continue to equal this past average, it was estimated that the approximate amounts would total: 307 million, or 51.2 million per year for the first 6-year period; 332 million or an average of 55.4 million per year during 1945 to 1950; and 337 million or 56.4 million per year for the third 6-year period. Since such expenditures would be considerably higher than the past average of some 35 million per year, this estimate was considered too optimistic.

Employing the amounts of assessment bonds outstanding as the basis for predicting future expenditures for assessable improvements is, of course, putting the cart before the horse. In this study, however, it was not feasible to attempt a forecast of the character or costs of improvements that may be paid for by local, borough or city-wide assessments.

Expenditures and Assessments Confirmed

Table 22 revealed that assessments confirmed have averaged 37.3 percent of outstanding bonds since 1929, but that assessments confirmed were 106.6 percent of expenditures. It seems reasonable to suppose that future expenditures will be equivalent to the amounts of assessments confirmed, and that accordingly, expenditures will average 37.3 percent of outstanding bonds.

Employing these hypotheses, it was estimated that the approximate amounts of expenditures for assessable improvements during each 6-year period would be: 246.9 million or an average of 41.1 million per year for the first; 267.5 million or 44.5 million per year during the second; and 270.9 million or an average of 45.1 million per year during the third period.

TABLE 24
Assessment Bonds and Assessed Valuations
(Figures in Millions of Dollars)

Year	Assessed Value	Assessment Bonds		Year	Assessed Value	Assessment Bonds	
		Outstanding January 1st	% of (1)			Outstanding January 1st	% of (1)
	(1)	(2)	(3)		(1)	(2)	(3)
1926	12,997	60.13	0.46	1932	19,616	91.37	0.46
1927	14,539	59.97	0.41	1933	18,457	96.87	0.52
1928	15,845	59.97	0.37	1934	17,149	96.87	0.56
1929	17,133	82.64	0.48	1935	16,649	99.07	0.59
1930	18,203	77.64	0.42	1936	16,678	94.07	0.56
1931	18,806	76.14	0.40	1937	16,599	91.20	0.55

The results of this estimate, as well as past expenditures, are shown graphically by Figure 27. Reference to this chart will reveal that while the estimated annual total expenditures would exceed the past average, the per capita outlays would be only slightly higher than the past average of \$5.12 up to the year 1957. Thereafter, the per capita expenditures would fall below this average and continue to decline.

Inasmuch as such expenditures would be below the 46.4 percent past average ratio of outlay to assessment bonds, and the per capita expenditures seemed reasonable, this estimate was adopted as the more conservative of the two forecasts made in this study.

Future Expenditures and Total Outlays

Table 23 shows that assessable improvements accounted for 23.5 percent of total outlays for permanent improvements during the years 1924 to 1936. The program suggested in the Capital Outlay section for future outlays on capital projects is shown in Table 26 and there contrasted with the assumed expenditures for assessable improvements.

During each of the three 6-year periods, the ratio of assessable improvements to total expenditures for permanent improvements would exceed the 23.5 percent average of the years 1924-1936. Outlays for assessable improvements during the eighteen years would average 29.6 percent of total expenditures, or about 43.5 million per year. On

TABLE 25
Estimated Amount of Future Assessment Bonds Outstanding
(Figures in Millions of Dollars)

Fiscal Year	Assessed Value	Assessment Bonds		Fiscal Year	Assessed Value	Assessment Bonds	
		% of (1)	Amount			% of (1)	Amount
	(1)	(2)	(3)		(1)	(2)	(3)
1-1-38	17,029	0.550	93.6	7-1-48	24,380	0.495	120.6
7-1-39	18,173	0.540	98.1	7-1-49	24,820	0.490	121.6
7-1-40	19,962	0.535	106.8	7-1-50	25,257	0.485	122.4
7-1-41	21,235	0.530	112.5	7-1-51	25,624	0.480	122.9
7-1-42	21,763	0.525	114.2	7-1-52	25,954	0.475	123.7
7-1-43	22,157	0.520	115.2	7-1-53	26,268	0.470	123.4
7-1-44	22,561	0.515	116.1	7-1-54	26,576	0.465	123.5
7-1-45	23,008	0.510	117.3	7-1-55	26,826	0.460	123.4
7-1-46	23,456	0.505	118.4	7-1-56	27,058	0.455	123.1
7-1-47	23,928	0.500	119.6	7-1-57	27,290	0.450	122.8

this basis, total outlays for permanent improvements would be equivalent to about 147 million per annum for the eighteen-year period.

As indicated on Figure 28, total annual outlays would average approximately 155 million during the first; 134 million during the second; and 151 million during the third 6-year period. While the magnitude of such expenditures may seem considerable, future total outlays for the period ending 1956 would practically equal the past annual average. This would also be true in the case of the per capita amounts, although future expenditures would be slightly less than the past per capita average.

CONCLUSIONS

Certain of the city's needs are so pressing, particularly for sewage treatment, parks, playgrounds, and highways, that it seems unlikely that the amounts of assessments confirmed can continue the recent trend and decline in the future, unless such needs can be financed from new sources of revenue. Furthermore, the amounts of expenditures for new outlays suggested in the "Program for Permanent Improvements" to be paid from assess-

ments would leave about one-third of the indicated total future assessable improvements for local betterments, which were not considered in the Mayor's Committee city-wide studies. In addition the report "Program for Permanent Improvements" shows that a considerable portion of the projects recommended for inclusion in the outlay schedule are mainly local in character. This is particularly true in the case of local parks and playgrounds, and partially so for sewage treatment, highways and other projects of a borough or city-wide nature.

The conclusions of this study are not intended to imply recommendations nor suggestions as to the total amount of assessable improvements that should be undertaken. It would be presumptuous to offer a complete program for expenditures from assessable improvement funds without first determining the extent of local needs and the desirability of each proposed local improvement. Inasmuch as such extensive surveys were beyond the province of the Mayor's Committee studies, the Assessable Improvement Study must be considered as entirely exploratory insofar as total possible expenditures from the revolving funds are concerned.

TABLE 26
Total Future Expenditures for Permanent Improvements
(Figures in Millions of Dollars)

6-Year Period	Capital Projects	Assessable Improvements	Total Expenditures	% Assessable of Total
1939-1944	686.68	246.92	933.60	26.5
1945-1950	539.30	267.56	806.86	33.1
1951-1956	638.56	270.98	909.54	29.8
18-Year Total	1,864.54	785.46	2,650.00	29.6

OUTSTANDING ASSESSMENT BONDS NEW YORK CITY

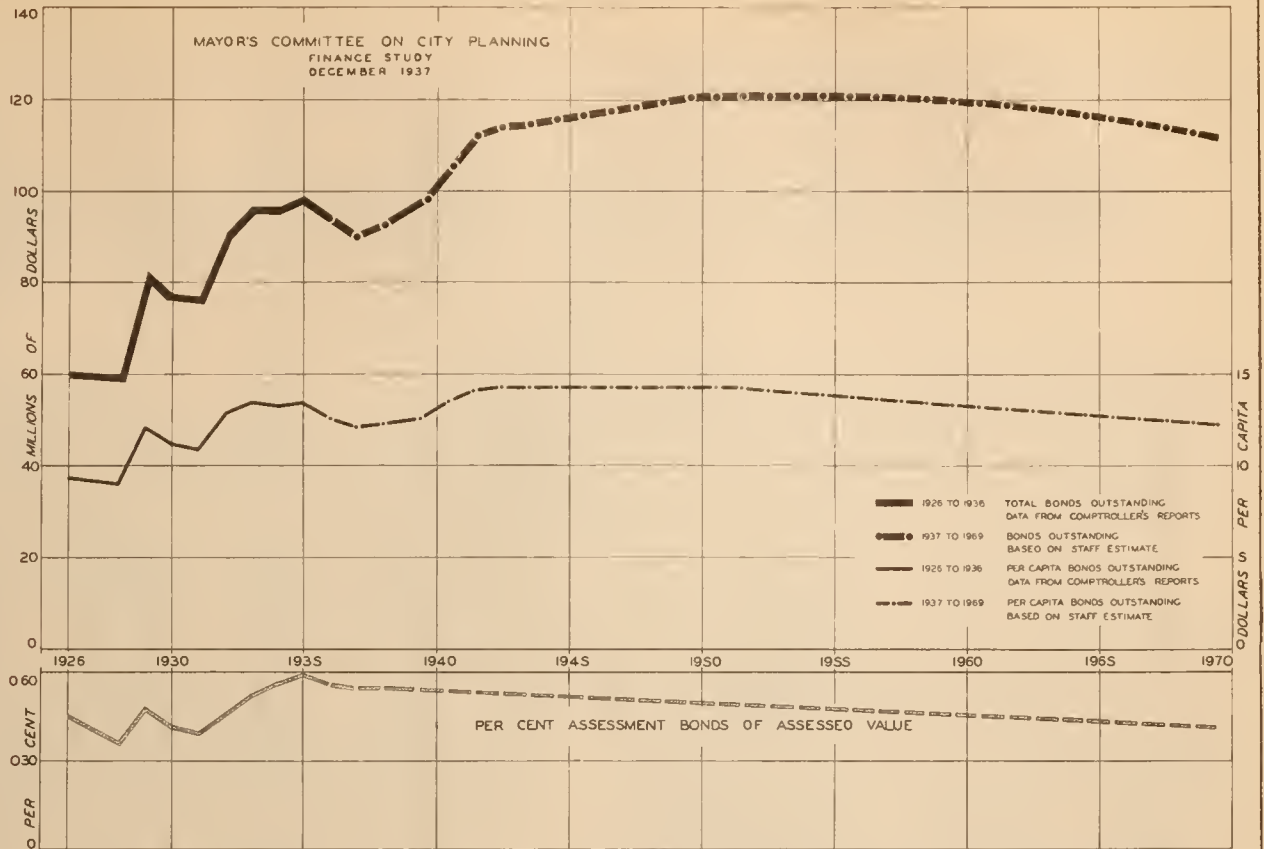


FIG. 26

TO PREPARE A MASTER PLAN
M.P.A. PROJECT NO. 448-97-3-98

EXPENDITURES FOR ASSESSABLE IMPROVEMENTS NEW YORK CITY

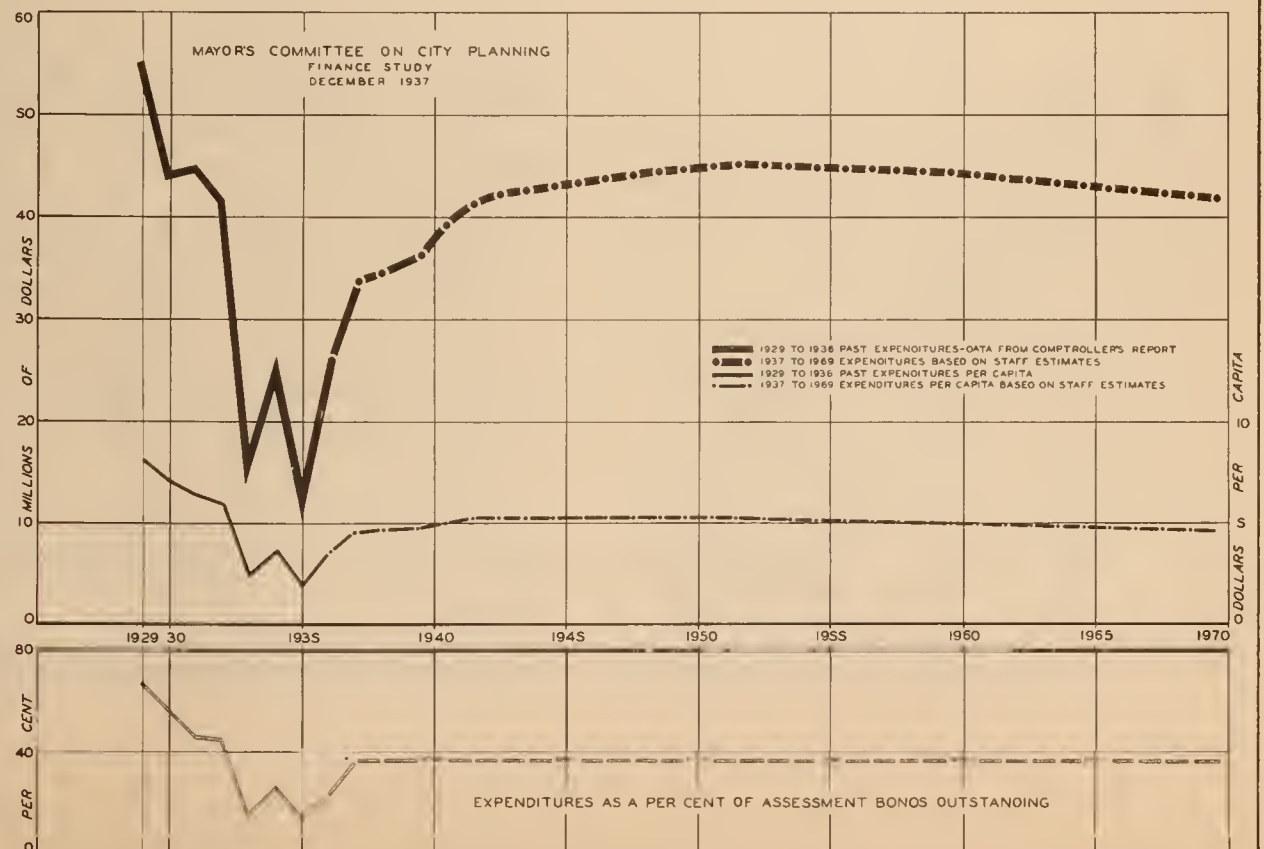


FIG. 27

TO PREPARE A MASTER PLAN
M.P.A. PROJECT NO. 448-97-3-98

TOTAL OUTLAY FOR PERMANENT IMPROVEMENTS NEW YORK CITY

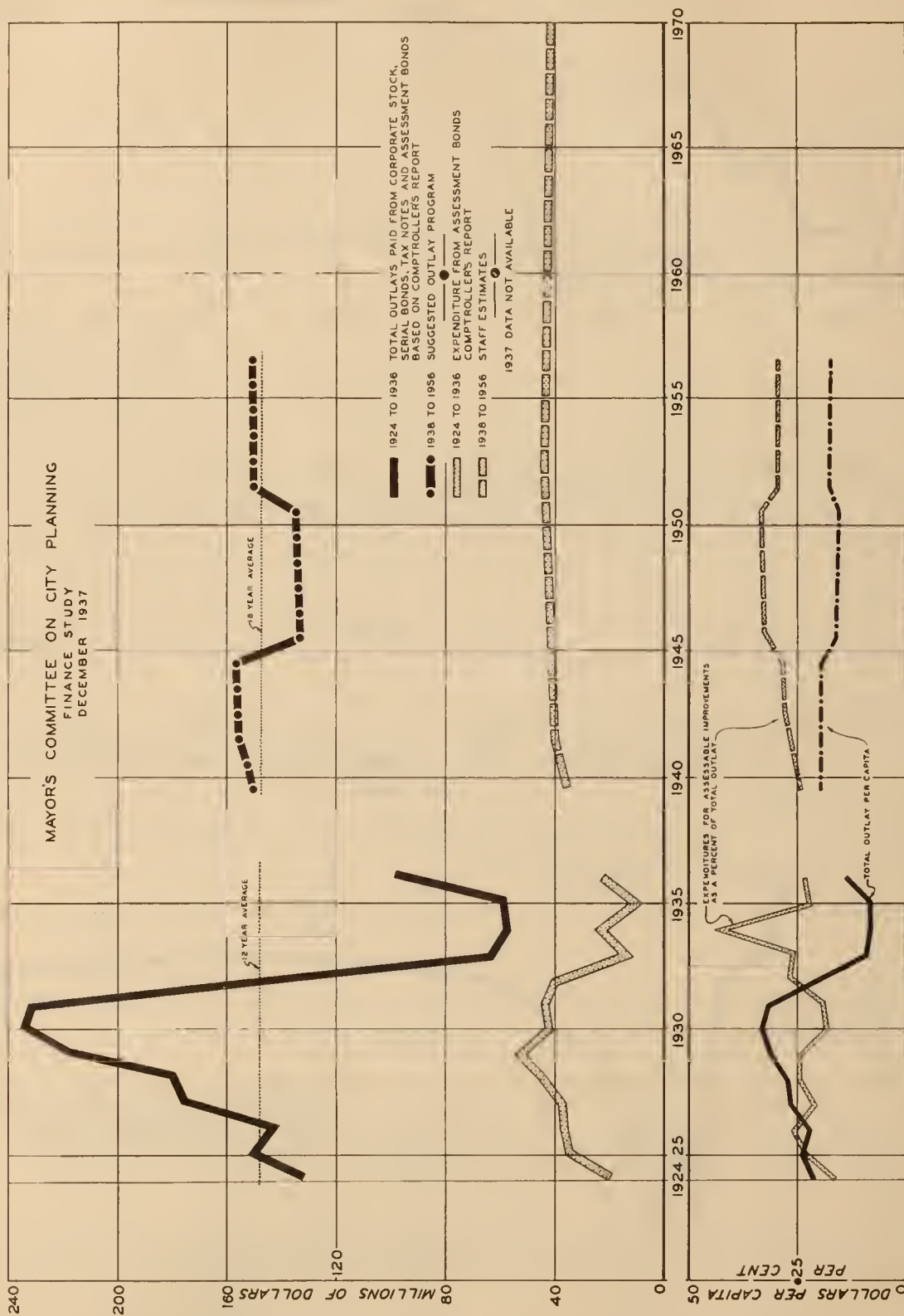


FIG. 28

TO PREPARE A MASTER PLAN
WPA PROJECT NO 468-97-3-46

Program for Permanent Improvements

INTRODUCTION

The finance study indicated the total amount of expenditures that the city could probably afford for permanent improvements during the eighteen years 1939 through 1956. This program study undertook the preparation of two outlay programs in which specific types of capital and assessable projects are scheduled in the order of relative urgency so that the aggregate expenditures suggested in each program would be within the city's indicated financial resources.

This report is divided into four major chapters: Distinction Between Capital and Assessable Improvements; Recommended Capital Program; Past and Future Capital Outlays; and Recommended Assessable Improvement Program.

Charter Provisions

Section 217 of the charter provides that the City Planning Commission shall prepare and "submit to the Board of Estimate, to the Council, to the Director of the Budget and to the Comptroller a proposed capital budget for all authorizations recommended to be adopted for the ensuing calendar year, the aggregate amount of which shall not exceed the amount specified in the Mayor's Certificate, and a capital program for the five calendar years next succeeding such ensuing calendar year. . . ." The provisions for adopting and amending the capital budget give the Planning Commission considerable influence in realizing the master plan through the timing of capital improvements. Section 211 of the charter, however, expressly *excludes* assessable improvements and the repavement of streets from the capital budget and program. Other provisions of the charter permit certain types of projects to be financed either as capital or assessable improvements according to public policy. This flexibility is doubtless desirable, but it complicates consideration of improvement programs in relation to financing methods.

Many projects that may be assessable improvements (e. g. highways, parks, etc.) are related to the time element of the master plan, but the charter does not specifically require the scheduling of

assessable projects. All assessable improvements costing more than \$10,000 must, however, be submitted to the City Planning Commission for a report based on their relation to the master plan and the city map, prior to final action by the Board of Estimate.

Financing Capital and Assessable Projects

The studies reported in "The Planning of Public Services for the City of New York", Part II of this City-Wide series, included estimates of the costs of meeting current deficiencies in public services and of providing such additional public betterments as will be needed to serve the city's probable future inhabitants. The outlay programs formulated in these studies suggested schedules of expenditures for improvements found to be desirable. In general, these individual programs were made without regard to appropriate methods of financing and could not be separately related to the city's total financial resources. It was the function of this program study to complete this phase of the investigations made for the Mayor's Committee on City Planning.

In the preparation of the improvement programs, it was first necessary to determine the type of financing that would be appropriate for each of the major classifications of public works found to be desirable in the city-wide studies of Public Services. Section 291 of the charter, which specifies the public betterments that may be financed by assessment, furnished a guide for the selection of assessable improvements. This Section of the charter is quoted in the chapter on "Assessable Improvements" in the finance study report.

After segregating the capital and assessable improvements, it was possible to consider the total costs of desirable projects in relation to the expenditure framework established by the finance study. In the following pages the term "capital" is used to designate improvements suggested for inclusion in the capital program; and "assessable" is used to distinguish those improvements that may be appropriately financed by assessments and thereby excluded from the capital program.

Distinction between Capital and Assessable Improvements

This chapter indicates the methods employed to designate the type of financing appropriate for each of the ten major classifications of permanent improvements, and compares the total costs of capital projects with the city's ability to pay for such betterments.

HIGHWAYS

The highway report of the Mayor's Committee on City Planning suggested three possible sources of funds to finance proposals contained therein, i. e., federal loans for self-liquidating projects, federal and state appropriations for construction of highways of regional importance, and city funds for other projects. The city's share of the costs of this highway program, segregated according to the types of projects, is given in Table 27 for each of the 6-year periods.

Section 291 of the charter, dealing with assessable improvements defines *street* as "street, avenue, road, alley, lane, highway, boulevard, concourse,

program would contain \$54,100,000 the first period, \$18,250,000 the second, and \$12,050,000 during the third period to finance capital projects suggested in the highway program. Table 28. The balance of the "city's share" for both land and construction costs would be paid from special assessments; \$64,550,000 during 1939-44; \$79,980,000 the second 6-year period; and \$52,580,000 during the six years 1951-56.

Supplementary Highway Proposals— In the highway report it was recommended that various supplementary highway proposals of an urgent nature, as well as secondary highways, and special intersections, which will be needed to complete the highway system on the master plan, be given early study. There were no cost estimates included for these items nor for local streets, but the major cost of such improvements will undoubtedly be met from special assessments.

The Comptroller's reports reveal that during the years 1924 to 1936 inclusive, a total of about

TABLE 27
City's Share of Highway Program Costs
(Figures in Thousands of Dollars)

Project	1939-44	1945-50	1951-56	18-Year Total
Express Routes	64,450	37,880	22,730	125,060
Major Structures	19,000	29,250	16,700	64,950
Major Highways	35,200	31,100	25,200	91,500
Total	118,650	98,230	64,630	281,510

parkway, driveway, culvert, sidewalk, crosswalk, boardwalk and viaduct, and every class of public road, square and place, except marginal streets". Hence such improvements when financed by assessment will be excluded from the capital budget.

The staff assumed, therefore, that the three following groups of highway projects will be capital improvements: (1) land acquisition and construction of routes which may be classed as marginal streets; (2) bridges or tunnels between two or more boroughs and approaches thereto; and (3) construction of major structures. Since all other types of highway projects fall within the charter definition of *street* it was assumed that both land and construction costs will be assessable for such improvements. On this basis the capital

\$2,600,000 was expended upon bridges within the jurisdiction of borough presidents; an average of 3c. per capita per year. Employing this past average, it appears that \$1,427,000 will be needed the first 6-year period, \$1,504,000 the second, and \$1,566,000 during the third period for such bridges. Under the new charter these expenditures may be made from the street improvement fund.

Contingent Items— The highway study cost estimates do not allow for expenses to cover the cost of major alterations or improvements to existing structures that will unquestionably become necessary during the course of the next eighteen years, and which will probably be classed as capital projects. Available data are not sufficient to disclose the extent of outlays that may be required

for such improvements. Hence, it was assumed that about ten percent of the total cost of highway projects, listed in Table 27, would be an adequate allowance for such contingencies.

The total expenditures for capital and assessable highway improvements indicated as necessary by these analyses are given in Table 29.

WATER SUPPLY

In the study of water supply facilities the staff recommended universal metering as both desirable

and essential to conserve the city's natural and financial resources. Since the expenditures required for metering, as well as for the completion of the first and second stages of the Delaware project, and for normal improvements to the distribution system fall under the heading of capital projects, assessment funds are not involved.

The total expenditures suggested for water supply (\$183,910,000 for the first 6-year period, \$99,593,000 during the second, and \$27,180,000 for the third period) will have to be considered in connection with the capital program for the eighteen-year period, 1939-1956 inclusive.

TABLE 28
Capital and Assessable Highway Projects
(Figures in Thousands of Dollars)

	Capital Projects	Assessable Improvements			Total Outlay
		Land	Construction	Total	
<i>1939-44</i>					
Express Routes	49,200	11,000	4,250	15,250	64,450
Major Structures	4,900	14,100	.....	14,100	19,000
Major Highways	.....	23,400	11,800	35,200	35,200
6-Year Total	54,100	48,500	16,050	64,550	118,650
<i>1945-50</i>					
Express Routes	.....	24,980	12,900	37,880	37,880
Major Structures	18,250	11,000	.....	11,000	29,250
Major Highways	.....	23,500	7,600	31,100	31,100
6-Year Total	18,250	59,480	20,500	79,980	98,230
<i>1951-56</i>					
Express Routes	.....	13,300	9,430	22,730	22,730
Major Structures	12,050	4,650	.....	4,650	16,700
Major Highways	.....	13,000	12,200	25,200	25,200
6-Year Total	12,050	30,950	21,630	52,580	64,630

TABLE 29
Indicated Outlays for Highways
(Figures in Thousands of Dollars)

	1939-44	1945-50	1951-56	18-Year Total
<i>Capital Program</i>				
Highway Program	54,100	18,250	12,050	84,400
Contingencies	2,800	2,800	2,800	8,400
Total Capital	56,900	21,050	14,850	92,800
<i>Assessment Funds</i>				
Highway Program	64,550	79,980	52,580	197,110
Bridges	1,427	1,504	1,566	4,497
Total Assessable	65,977	81,484	54,146	201,607

SANITATION

The sanitation study covered facilities required for refuse and sewage disposal, and miscellaneous projects such as garages, storage buildings, scows, etc. If the entire program is to be carried out, this study indicates that \$15,210,000 would be needed for incinerators, \$166,500,000 for sewage disposal and \$6,888,000 for miscellaneous projects during the eighteen years, 1939-56 inclusive.

While the charter classes incinerators and these miscellaneous improvements as capital projects, it permits the financing of sewage disposal plants and intercepting sewers either by assessment (Section 291), or by serial bonds (Section 244). It was assumed that one-half of the estimated

costs for sewage disposal projects will be paid for by special assessment and that the balance, classed as capital projects, will be included in the capital program.

Table 30 shows that on this basis required capital outlays for sanitation projects would amount to about 35 million dollars the first 6-year period, some 35.1 million the second and 35.22 million the third 6-year period.

It may develop that future circumstances affecting each sewage disposal project will increase the proportion of cost charged against special assessments, but the designation of 50 percent of total outlays as capital improvements was believed to be a conservative allowance.

TABLE 30
Capital and Assessable Sanitation Projects
(Figures in Thousands of Dollars)

1939-44	Capital	Assessable	Total
Incinerators	5,070	.....	5,070
Sewage Disposal	27,750	27,750	55,500
Miscellaneous	2,184	.....	2,184
6-Year Total	35,004	27,750	62,754
1945-50			
Incinerators	5,070	.....	5,070
Sewage Disposal	27,750	27,750	55,500
Miscellaneous	2,304	.....	2,304
6-Year Total	35,124	27,750	62,874
1951-56			
Incinerators	5,070	.....	5,070
Sewage Disposal	27,750	27,750	55,500
Miscellaneous	2,400	.....	2,400
6-Year Total	35,220	27,750	62,970

TABLE 31
Indicated Expenditures for Parks
(Figures in Thousands of Dollars)

Period	1939-44	1945-50	1951-56	18-Year Total
Playgrounds and Athletic Fields	33,000	33,000	33,000	99,000
Small Quiet Parks	32,220	32,220	32,220	96,660
Large Parks	11,160	11,160	11,160	33,480
Obsolescence	11,700	13,230	14,760	39,690
Totals	88,080	89,610	91,140	268,830

PUBLIC PARKS

Completion of the entire program suggested in the park study to meet the needs of the city would require expenditures of nearly 490 million dollars by the year 1970 for public parks. However, the staff suggested that outlays for new parks be spread in approximately equal amounts over the thirty-two years, 1939-70 inclusive. On this basis expenditures for parks during the eighteen years, 1939-56, would aggregate \$268,830,000 as shown in Table 31.

160,000 during the eighteen years, 1939 through 1956.

Although this particular separation of expenditures is clean cut, new land may be paid for by special funds or capital funds, and many of the development projects could be authorized as assessable improvements. However, the above division between capital and assessable seems to be reasonable for the purpose of this study. The obsolescence type of project includes general improvements to the existing park plants, and major replacements

TABLE 32
Capital and Assessable Park Improvements
(Figures in Thousands of Dollars)

Period	1939-44	1945-50	1951-56	18-Year Total
<i>Capital Projects</i>				
Development	8,490	8,490	8,490	25,470
Obsolescence	11,700	13,230	14,760	39,690
Total Capital	20,190	21,720	23,250	65,160
<i>Assessable</i>				
Land Acquisition	67,890	67,890	67,890	203,670

Although the charter permits park improvements to be financed as assessable improvements, or as capital projects, the staff assumed that all land for new parks would be paid for by assessment. On this hypothesis land costs for proposed new parks, (shown in Table 32 as \$203,670,000) would be designated as assessable improvements. If the expenses for development of proposed new parks and the expenditures indicated by the park study as necessary for "obsolescence" were designated as capital projects, they would total \$65,

of worn out equipment—items listed along with the development of parks in the Departmental Requests that preceded the adoption of the 1938 Capital Outlay Budget. Most land acquisition appears to have been paid from the street and park openings fund.

EDUCATION

The education study made by the staff of the Mayor's Committee on City Planning, forecast a gradual decrease in future public school registra-

TABLE 33
Capital Expenditures for Educational Facilities
(Figures in Thousands of Dollars)

Period	1939-44	1945-50	1951-56	18-Year Total
Schools Authorized and under construction	32,210	.....	.....	32,210
New Elementary Schools	31,080	.....	.....	31,080
New High Schools	103,000	17,100	.....	120,100
Replacements	54,000	66,000	69,000	189,000
Total Public Schools	220,290	83,100	69,000	372,390
City Colleges	9,000	9,500	10,000	28,500
Grand Total	229,290	92,600	79,000	400,890

tion, which is now evident in elementary schools and is expected to be reflected in high school registration after the year 1945. However, the present deficiencies and future needs of New York City's public school plant were found to require extensive outlays during the eighteen years, 1939-56. Table 33 shows the expenditures indicated by the education study as necessary for public schools and colleges.

Although indicated expenditures aggregate \$400,890,000 only \$28,500,000 is allowed for colleges; replacements and relocation of obsolete public schools would require nearly \$190,000,000 and new elementary and high schools an additional \$183,390,000. Since none of these expenditures can be paid for by assessment, all educational betterments are capital projects and must be provided for in the capital program.

DOCKS

The probable requirements for "docks", including dock, wharf, airport and ferry facilities, call for outlays totaling \$23,600,000 the first 6-year

first 6-year period total \$14,270,000; for the second period \$15,000,000; and \$15,700,000 for the third 6-year period; all of which are classified as capital expenditures. See Table 36.

HEALTH

The expenditures suggested by the staff for "Health" projects would provide for city hospitals of all types, clinics, health center and public welfare buildings, etc. The general studies of the staff indicate that the minimum needs anticipated would require outlays of \$30,000,000 the first 6-year period, \$31,560,000 the second, and \$32,890,000 the third 6-year period. No portion of these outlays can be financed by special assessment, and therefore must be included in the capital program. See Table 36.

PUBLIC BUILDINGS AND MISCELLANEOUS

The facilities grouped under the heading of "Public Buildings and Miscellaneous", comprises markets, libraries, museums, courts, administrative and other public buildings not elsewhere included,

TABLE 34
Expenditures Indicated for Public Buildings and Miscellaneous Capital Improvements
(Figures in Thousands of Dollars)

Purpose	1939-44	1945-50	1951-56	18-Year Total
Markets	9,500	10,000	10,400	29,900
Libraries	1,990	2,100	2,190	6,280
Museums	4,270	4,500	4,690	13,460
Courts	9,500	10,000	10,400	29,900
Administration, etc.	10,000	10,570	11,000	31,570
Miscellaneous	20,440	21,530	22,520	64,490
Total	55,700	58,700	61,200	175,600

period, \$24,800,000 the second, and \$25,850,000 the third 6-year period. All expenditures for such "dock" improvements must be financed as capital projects, and will be included in the capital program. The eighteen-year totals are given in Table 36.

PROTECTION

The expenditures for permanent improvements needed by the Fire, Police and Corrections Departments and the Armory Board, are grouped under the heading of "Protection." None of these betterments can be assessable and, therefore, must be provided for in the capital program. The outlays indicated to meet expected requirements for the

and expenditures for miscellaneous capital projects.

The extent of outlays that will probably be required in the future for improvements of this type are shown in Table 34 to total 55.7 million dollars the first, 58.7 million the second, and 61.2 million dollars during the third 6-year period. Since none of these outlays are assessable improvements, all of these betterments are designated as capital projects and will have to be included in the capital program.

RAPID TRANSIT

The rapid transit study revealed that completion of lines under construction, extensions of existing routes, construction and equipment for

TABLE 35
Costs of Rapid Transit Improvements
(Figures in Thousands of Dollars)

Period	1939-44	1945-50	1951-56	18-Year Total
6th Ave. Line	18,120	.....	.....	18,120
Fulton St. Extension	55,600	.....	.....	55,600
Other Authorizations	10,000	.....	.....	10,000
Total "Pending" Projects	83,720	.....	.....	83,720
Remedial Measures	45,000	45,000	45,000	135,000
New Lines	150,000	150,000	150,000	450,000
Unification	400,000	.....	.....	400,000
Contingencies	19,850	32,000	35,600	87,450
Total "New" Projects	614,850	227,000	230,600	1,072,450
Total Program	698,570	227,000	230,600	1,156,170

desirable new routes that were studied, and unification of the transit system would cost the city more than 1.1 billion dollars during the eighteen years, 1939-56, if all of these items were to be undertaken. None of these projects are assessable and hence would be designated as capital improvements. Table 35 lists the estimated costs of the various capital projects suggested by the study of rapid transit during each of the three 6-year periods.

Completion of the Sixth Avenue Line, the Fulton Street extension to Grant Avenue, and the financing of miscellaneous equipment projects, to which the city is already committed, call for capital outlays aggregating \$83,720,000 for "pending"

projects. All of these improvements are scheduled for the first 6-year period.

Remedial measures to increase the capacity of existing lines, desirable new lines studied by the staff, the assumed costs of unification, and allowances for contingencies, would add \$1,072,450,000 during the eighteen years 1939-56 for "new" improvements to the rapid transit system.

The total expenditures for pending projects and for unification are indicated for the first 6-year period, but the staff suggested that outlays for other new projects be spread about evenly over the three 6-year periods. Total outlays during the first 6-year period would be more than three times the expenditures indicated for the second and for the third 6-year periods in this schedule.

TABLE 36
Indicated Expenditures for Capital Improvements
(Figures in Thousands of Dollars)

Period	1939-44	1945-50	1951-56	18-Year Total
Highways	56,900	21,050	14,850	92,800
Water Supply	183,910	99,593	27,180	310,683
Sanitation	35,004	35,124	35,220	105,348
Public Parks	20,190	21,720	23,250	65,160
Education	229,290	92,600	79,000	400,890
Docks	23,600	24,800	25,850	74,250
Protection	14,270	15,000	15,700	44,970
Health	30,000	31,560	32,890	94,450
Public Bldgs. & Misc.	55,700	58,700	61,200	175,600
Rapid Transit	698,570	227,000	230,600	1,156,170
Total	1,347,434	627,147	545,740	2,520,321

CAPITAL IMPROVEMENTS AND RESOURCES

The projects designated as capital improvements in each of the ten major groups employed in this study comprise all of the various types of improvements that may be provided for in the capital program. The expenditures indicated by the Mayor's Committee studies as necessary for desirable capital improvements, summarized in Table 36, would aggregate \$2,520,321,000 during the eighteen years 1939 through 1956. These expenditures would exceed 1,347 million dollars during the first 6-year period, which would be more than one-half of the eighteen-year total. During the second and third 6-year periods indicated expenditures are considerably smaller, about 627 million and 546 million dollars respectively. Rapid transit alone would account for more than 45 percent of the total expenditures required for all improvements here designated as capital projects.

The procedure followed in the several studies covering public works was predicated upon what might be termed "minimum needs" for desirable improvements, irrespective of the city's ability to pay for such betterments. It may be expected, therefore, that the amounts shown in Table 36 will be much less than the aggregate costs of improvements which city agencies will request the City Planning Commission to include in capital budgets and programs during the next eighteen years.

The City's Capital Outlay Resources

The finance study ascertained the city's ability to pay for all capital improvements, both old and new projects, regardless of whether the resulting debt would be within the 10 percent debt limit

or would be exempt therefrom. The capital expenditures shown in Table 36 are not related to debt limitations and are, therefore, directly comparable with the city's financial resources as revealed by the finance study.

The indicated expenditures for desirable capital improvements are given in Table 37 as "Cost of Improvements" and the total amount of capital outlays found by the finance study to be within the city's financial resources are shown as "Capital Resources". Inspection of this table reveals that while "Resources" would cover all capital costs during the six years 1951-56, the "Cost of Improvements" would *exceed* "Resources" by approximately 660 million dollars the first 6-year period and 88 million dollars during the second 6-year period. For the entire eighteen-year period "Costs" would exceed "Resources" by nearly 656 million dollars.

In the finance study it was recommended that a portion of the total capital outlays found to be within the city's future borrowing capacity be reserved as a cushion of debt incurring power which might be used to advantage during periods of economic recession. The recommended reservation of borrowing capacity, shown in Table 37 as "Reserve", could of course be expended along with "Capital Resources" to finance additional desirable capital improvements. If the "Reserve" were added to "Resources", however, the "Cost of Improvements" would still exceed "Resources" by some 487 million dollars over the entire eighteen years and the resulting total "Resources" available during the first 6-year period would be nearly 600 million dollars less than the "Cost of Improvements". The expenditure of the "Reserve", therefore, would not improve the situation

TABLE 37
Capital Improvements and Resources
(Figures in Millions of Dollars)

Period	1939-44	1945-50	1951-56	18-Year Total
Cost of Improvements	1,347.43	627.14	545.74	2,520.31
Capital Resources	686.68	539.30	638.56	1,864.54
Excess of Cost Over Resources	660.75	87.84	92.82*	655.77
Reserve	63.91	49.89	54.43	168.23
Excess of Cost	596.84	37.95	147.25*	487.54

* Resources *exceed* Costs

to any considerable extent and does not appear justifiable.

Inasmuch as the total costs of desirable capital improvements are above the city's means, it was

necessary to ascertain the relative urgency of each class of capital improvement and to weed out the less essential projects which could be omitted from the capital program.

Recommended Capital Program

This chapter is concerned with the selection of the more urgent projects designated as capital improvements, for inclusion in an eighteen-year capital program, the aggregate cost of which will remain within the city's indicated financial resources during each of the three 6-year periods.

SELECTION OF CAPITAL PROJECTS

In this part of the study, the ten major groups of capital improvements were carefully reviewed in order to remove the relatively less urgent projects from the schedules, and to shift other projects whenever possible from one 6-year period to another period. Some capital projects that might

would warrant the outlays needed to complete the projects scheduled in the highway report.

Reclassification of projects—In the preceding chapter of this report the East River Drive, Harlem River Drive and Shore Parkway were designated as capital improvements due to the proposed location of these routes along waterfronts. Only a broad interpretation of the word marginal, however, would permit the classification of such highways as marginal streets.

Therefore, these three projects, scheduled for the first 6-year period, were re-classified as assessable improvements. As a result 26.3 million dollars of highway outlays were transferred from the

TABLE 38
Recommended Program for Highways
(Figures in Thousands of Dollars)

Period	1939-44	1945-50	1951-56	18-Year Total
CAPITAL PROJECTS				
Major Program	27,800	18,250	12,050	58,100
Contingent Projects	.....	4,200	4,200	8,400
Total Capital	27,800	22,450	16,250	66,500
ASSESSABLE IMPROVEMENTS				
Highway Program	90,850	79,980	52,580	223,410
Bridges	1,427	1,504	1,566	4,497
Total Assessable	92,277	81,484	54,146	227,907
Total Program	120,077	103,934	70,396	294,407

be re-classified as assessable improvements in accordance with charter provisions were removed from the lists of capital improvements and designated "assessable improvements".

Inasmuch as the costs of desirable capital improvements during the years 1939-44, were nearly double the resources available to finance such outlays, it was necessary to shift a large number of projects from the first to the second and third 6-year periods.

Highways

Studies of the Mayor's Committee on City Planning suggest that the importance of the major highway program in the city's development

lists of capital to assessable projects scheduled for the six years 1939-44. Table 38.

Re-scheduling of projects—The allowances for "Contingent" projects, Table 29, were shifted in the following manner: the 2.8 million dollar outlay indicated in the first period for these projects was postponed, one-half to the second and one-half to the third 6-year period. Since these allowances cover alterations and general improvements to existing structures, which might be deferred so that the major program would not be delayed, the revised schedule of expenditures for capital and assessable improvements given in Table 38 seems satisfactory.

Water Supply

The staff study of water supply facilities revealed that immediate needs for additional water cannot be safely postponed, nor was it believed desirable or economically feasible to forego universal metering. Therefore, the schedule of outlays for capital improvements previously suggested in Table 36 are recommended to be included in the capital program.

Sanitation

If the program for construction of sewage treatment plants were spread over thirty-two years instead of the eighteen-year period suggested, capital budget allowances would only be reduced by

the basis of the information available at this time, to transfer such heavy outlays to assessable schedules. The capital outlays indicated for incinerators and miscellaneous projects should not be postponed nor reduced. Therefore, the capital expenditures scheduled in Table 30, totaling \$105,348,000 for eighteen years, are recommended for inclusion in the capital program.

Public Parks

Since public recreation is essential for both children and adults and will play an important part in increasing the desirability of the city as a place in which to live, the suggested park program should not be deferred.

TABLE 39
Recommended Capital Program for Parks
(Figures in Thousands of Dollars)

Period	1939-44	1945-50	1951-56	18-Year Total
Development	8,490	8,490	8,490	25,470
Obsolescence	7,510	7,510	7,510	22,530
Total	16,000	16,000	16,000	48,000

approximately \$11,000,000 during each of the three 6-year periods. An adequate solution of the pressing problem of sewage disposal would, however, not be achieved until the year 1970.

While the effectiveness of any sewage treatment system will depend to some extent upon the cooperative action of neighboring states, the city's program should proceed as rapidly as possible in order to reduce water pollution and to hasten joint interstate action.

It is possible to reduce the indicated capital outlays for sewage disposal by assigning a larger proportion of the costs to assessable improvements. It was not deemed advisable, however, on

Inasmuch as the charter permits park projects to be financed by assessment or capital expenditures, the staff believed it reasonable to designate some of the capital improvements for "obsolescence" (see Table 32) as assessable so as not to delay progress on the entire park program.

Accordingly, 4.19 million dollars of expenditures for projects originally classed as "obsolescence" during the first period, 5.72 million the second, and 7.25 million dollars for the third 6-year period, were re-designated as assessable and removed from the lists of capital projects. As a result capital expenditures for "obsolescence" projects total 7.51 million dollars, and the recom-

TABLE 40
Recommended Capital Program for Education
(Figures in Thousands of Dollars)

Period	1939-44	1945-50	1951-56	18-Year Total
New Schools	166,290	17,100	.....	183,390
Replacements	20,000	66,000	103,000	189,000
College	9,000	9,500	10,000	28,500
Total	195,290	92,600	113,000	400,890

mended capital program calls for outlays aggregating 16 million dollars during each of the three 6-year periods. Table 39.

Education

New elementary and secondary schools are so urgently needed that they should have a preferred standing in any consideration of capital programs; and the replacing or relocation of obsolete public schools is a pressing problem. The small allowance for college expenditures will probably cover requests for the more essential improvements.

The lack of sufficient funds, however, suggests that some of the education projects shown in Table 33 will have to be deferred. Accordingly, only 20 million dollars of the 54 million allowance for replacement and relocation of obsolete schools is recommended for expenditure during the first 6 years, the balance of 34 million dollars being scheduled for expenditure during the third 6-year period (Table 40); the second period schedule of "replacements" was not altered.

Due to the many difficulties of carrying out a large school construction program and the careful study required for sound selection of new sites, this revised schedule of outlays for replacement and relocation will unquestionably produce better results than could have been obtained under the pressure of the construction program indicated by Table 33 for the first 6-year period.

Docks

Water-borne commerce is a fundamental element in the economy of New York City, and the maintenance of adequate dock facilities to meet the requirements of this commerce is of primary importance. Therefore, it would not be realistic

to suppose that any considerable reduction in expenditures for dock and airport facilities is possible.

The staff estimates of outlays indicated for the eighteen years 1939-56, were reduced from \$74,250,000 to \$65,900,000 in the belief that this amount would cover the more essential needs. It is recommended that at least 20 million dollars be provided during the first period, 22.5 million the second, and 23.4 million dollars during the third 6-year period, for such construction, extension and alteration of the betterments included under "docks" as may prove essential.

Protection

The capital and the operating costs of such public services as Fire, Police and Correction may be expected to relate directly to the population served. Inasmuch as staff estimates of the outlays that will be needed for normal extensions and general improvements to the plants of these agencies and to armories were based upon "minimum" needs, it is recommended that the capital program contain allowances equal to the capital outlays indicated in Table 36 as being desirable.

Health

Due to increasing consciousness of the need for, and the desirability of providing more adequate public health and welfare services, it was not deemed likely that the estimated costs of this type of permanent improvement could be reduced. Consequently, it is suggested that the capital program contain allowances for health projects equivalent to the staff estimates of expenditures required for capital improvements, as given in Table 36.

TABLE 41
Recommended Capital Program for Public Buildings and Miscellaneous Projects
(Figures in Thousands of Dollars)

Period	1939-44	1945-50	1951-56	18-Year Total
Markets	7,600	8,000	8,320	23,920
Libraries	1,990	2,100	2,190	6,280
Museums	4,270	4,500	4,690	13,460
Courts	7,600	8,000	8,320	23,920
Administration	10,000	10,570	11,000	31,570
Miscellaneous	10,140	10,730	11,180	32,050
Total	41,600	43,900	45,700	131,200

Public Buildings and Miscellaneous

Of the ten major groups of permanent improvements employed in this study, Public Buildings and Miscellaneous is the classification presenting the greatest leeway for expansion or contraction of expenditures. While some of the improvements comprising this group may be desirable and others relatively urgent, it is true that in general this type of project does not have the same preferred standing as water supply, sanitation, highways, education, etc. Therefore, the staff attempted to cut the schedules of expenditures to a minimum but at the same time to retain sufficient allowances to cover the more important needs, some of which cannot very well be postponed.

Markets—The original estimates (Table 34) were reduced by twenty percent and recommended outlays scheduled as shown in Table 41.

Libraries and Museums—Even with PWA and WPA assistance, necessary improvements are still lacking, and as the amounts are relatively small it is recommended that the capital program provide for outlays equal to the original estimates of needs, so as to take care of obsolescence and normal enlargements to libraries and museums.

Courts—While extension of court facilities and some improvements to provide for depreciation cannot be too long delayed, it would seem that not less than eighty percent of the original estimates (Table 34) of needs should be scheduled in the capital program to carry out the more important projects, as shown in Table 41.

Administration—Inasmuch as all types of public buildings, not otherwise contained in the other ten major classifications, are included under this subgroup, the original estimates of needed expenditures are recommended for inclusion in the capital program in order that depreciation and extension of essential facilities may be taken care of without seriously impairing public services.

Miscellaneous—This item contains allowances for the various projects that cannot be otherwise classified, including some of the authorizations that were deducted from the Expense Budget in the finance study because they are paid from capital funds (expenses of the Boards of Water Supply and Transportation, etc., are included under appropriate groups). The staff concluded, however, that the scheduling of capital projects under provisions of the new charter may be expected to reduce materially the future costs of miscellaneous capital projects. Hence the original estimates, cut by about fifty percent, are recommended as the minimum capital program allowance, to be scheduled as shown in Table 41.

The *Recommended Program* of expenditures for Public Buildings and Miscellaneous Projects, resulting from the above revisions, given in Table 41, schedules a total of 41.6 million dollars for the first 6-years; 43.9 million during the second period; and 45.7 million dollars the third 6-year period.

Rapid Transit

Reference to Tables 36 and 37 will show that the costs of transit projects included therein amount to 45 percent of all outlays indicated for capital improvements during 1939-56; and further, that these costs alone are nearly 1.8 times the amount of the excess of indicated expenditures over the city's financial resources. Since we are here concerned with the adjustment of schedules for expenditures upon desirable capital projects the aggregate cost of which will be within the city's financial resources, it is of interest to summarize the results obtained for the other nine major classifications of permanent improvements prior to considering the relative urgency of transit needs.

The schedules of capital outlays recommended for the nine groups, excluding transit, total \$563,874,000 for the 6 years 1939-44; \$378,727,000 for the second 6-year period; and \$325,340,000 during the third 6 years. If capital expenditures are to balance with the amount of funds within the city's financial resources, then after providing for these recommended improvements, the capital program could schedule expenditures of only \$122,806,000 for rapid transit during the 6 years 1939-44; \$160,573,000 for the second; and \$313,220,000 during the third 6-year period.

What transit facilities are obtainable with this amount of expenditures? New projects costing \$39,086,000 could be undertaken and the following pending projects could be completed during the first 6-year period: 6th Avenue Line and the Fulton Street Extension, and other improvements to the extent of specific authorizations. During the second and third 6-year periods "remedial measures" could be finished, if all new money were spent for this purpose during the first period. In addition approximately three-quarters of the proposed new subway lines could be built, and estimated expenditures for contingencies that will probably arise during the eighteen years could be taken care of during the second and third 6-year periods. Table 42. For a discussion of the methods used to estimate contingent items given in Table 42, see the transit study report.

Unification of rapid transit lines is desirable but the staff study of transit assumed that the costs to the city will probably aggregate 400 mil-

TABLE 42
Recommended Capital Program for Rapid Transit
(Figures in Thousands of Dollars)

Period	1939-44	1945-50	1951-56	18-Year Total
6th Ave. Line	18,120	.....	.....	18,120
Fulton St. Extension	55,600	.....	.....	55,600
Other Authorizations	10,000	.....	.....	10,000
Total Pending Projects	83,720	.....	.....	83,720
Remedial Measures	39,086	50,914	45,000	135,000
New Lines	.....	109,000	202,000	311,000
Contingencies	.....	659	66,220	66,879
Total New Projects	39,086	160,573	313,220	512,879
Total Program	122,806	160,573	313,220	596,599

lion dollars. While such an allowance may be generous, this study reveals that unification cannot be accomplished and the city's other minimum needs met unless the unification bonds are exempt from the ten percent debt limit and the city's financial resources, as forecast in the finance study, are enlarged by additional revenue either from real estate taxes, larger operating income from transit lines, or other sources.

Recommendations— Careful consideration of the situation suggests that the city cannot afford to ignore nor to indefinitely postpone outlays for other desirable and relatively more urgent improvements in favor of transit unification. The staff, therefore, recommends that the expenditures for transit, as scheduled in Table 42, be included in the capital program. This suggestion is made with due consideration of the fact that unification may be possible in the near future, but in the belief

that the direct costs to the city may be financed by revenue from sources other than those included under Income in the finance study, provided that the unification bonds are exempt from the constitutional debt limit.

SUMMARY OF THE RECOMMENDED CAPITAL PROGRAM

With the omission of rapid transit unification the program of expenditures for recommended capital improvements, scheduled as shown in Table 43, would equal the amounts of outlays found to be within the city's financial resources for each of the 6-year periods.

A more detailed study of projects within each of the ten major groups of permanent improvements, such as the new City Planning Commission will

TABLE 43
Recommended Capital Program For the Eighteen-Year Period 1939-56
(Figures in Thousands of Dollars)

Period	1939-44	1945-50	1951-56	18-Year Total
Highway	27,800	22,450	16,250	66,500
Water Supply	183,910	99,593	27,180	310,683
Sanitation	35,004	35,124	35,220	105,348
Public Parks	16,000	16,000	16,000	48,000
Education	195,290	92,600	113,000	400,890
Docks	20,000	22,500	23,400	65,900
Protection	14,270	15,000	15,700	44,970
Health	30,000	31,560	32,890	94,450
Public Bldgs. & Misc.	41,600	43,900	45,700	131,200
Rapid Transit	122,806	160,573	313,220	596,599
Total	686,680	539,300	638,560	1,864,540

undertake annually in formulating the capital budget and the five year capital program, would unquestionably reveal the desirability of additional shifts within the general framework of the program given in Table 43.

To be sure, there are almost unlimited possibilities for re-scheduling expenditures by deferring projects, shifting from one period to another, or by a further reduction in outlays recommended for certain classes of projects. However, the city's resources are so small in relation to its needs, that the possibilities of rearranging the recommended program are greatly reduced by the necessity of including many of the more costly projects in any event, because of their unquestionable urgency.

With the exception of rapid transit unification the recommended capital program, summarized in Table 43, appears to contain outlays sufficient in amount to provide for the more urgently needed permanent improvements, and at the same time indicates the general outlook for capital expenditures during the next eighteen years if the more essential capital projects are to be given proper consideration.

The current PWA program, if it should be ex-

panded, will permit the construction of some of the capital projects included in the recommended program at reduced costs to the city. The saving to the city would be equivalent to the Federal grants on such projects. If the PWA and the city undertake new projects included in the recommended capital program, then it would be possible to finance permanent improvements in addition to those recommended as within the city's financial resources, the costs of which could equal the amounts saved by the city through Federal grants on new PWA projects.

Inasmuch as the finance study and the indicated outlays for certain types of needed projects were related to or based upon extensions of past per capita phenomena, an increase or decrease in the expected growth of population in New York City would affect the outlay schedules. The Federal Census of 1940 will provide the first opportunity of checking staff population estimates and ascertaining changing trends. The City Planning Commission will doubtless carry out such analyses whenever new data become available as a general guide in its studies of long-term scheduling of permanent improvements.

Past and Future Capital Outlays

The Mayor's Committee on City Planning directed the staff to compare the capital expenditures recommended for various purposes with past outlays in New York and other large cities. Unfortunately, the operations required in the course of preparing material for the program for permanent improvements consumed all of the staff's available time prior to the termination of the WPA project sponsored by the Committee. Therefore, it was not possible to obtain sufficient information nor to digest the meager data that might permit comparisons of outlays suggested for the various types of capital improvements with expenditures for similar purposes in other cities.

However, the staff completed an analysis of Comptroller's reports that reveals the amounts expended, between the years 1924 and 1936 inclusive, for the ten major groups of permanent improvements employed in this study.

PAST CAPITAL EXPENDITURES

After a careful study of the Comptroller's reports it was possible to segregate the expenditures from Corporate Stock, Serial Bond, Tax Note and Special Funds (exclusive of PWA grants) for each

of the ten functional groups of capital projects. This information could not readily be obtained from reports prior to the report for the year 1924, nor was the 1937 report published until after the termination of the WPA project. Hence, the data assembled cover the thirteen-year period 1924 to 1936, inclusive.

Items Deducted from Past Outlays

Under the charter—Section 117, Item 5—appropriations for the repaving of streets must be provided in the Expense Budget out of current revenue. Therefore, the costs of repaving streets cannot be handled as a permanent improvement in the future.

The repaving of streets, however, has been financed by expenditures from what are termed capital funds in this study. In order to place past outlays on a comparative basis with recommended expenditures, it was necessary to deduct such costs from total past outlays. In Table 44, the amounts spent for repaving have been separated from other Corporate Stock, Serial Bond, Tax Note and Special Fund outlays.

Local Sewers and Bridges, within the jurisdic-

tion of the Borough Presidents, were assumed to be assessable improvements for the purpose of this study. The relatively small amount of capital funds spent on such projects in the past was also deducted from total outlays for permanent improvements. Table 44.

Segregation of Outlays by Purpose

When these deductions had been made, the remaining annual expenditures were segregated according to the type of improvement and arranged under one of the ten functional groups which contain similar types of projects. As the next step in this operation, outlays for each purpose were summarized according to the appropriate functional group for each of the thirteen years 1924-1936, inclusive. The results are given in Table 44

Reference to this table will reveal that the thirteen-year "Total Capital" outlays exceeded 1.42 billion dollars; that in addition, the cost of repaving, local sewers and bridges within the jurisdiction of the Borough Presidents brought the "Grand Total" to more than 1.47 billion dollars of city funds.

Highways, including parkways, bridges, viaducts and tunnels, accounted for slightly over \$24,459,000 of capital outlays. *Water Supply*, which includes projects built under the Department of Water Supply, Gas and Electricity, as well as the Board of Water Supply, took more than \$133,700,000. *Sanitation* projects, such as incinerators, sewage plants, water front dumps, etc., received about \$19,640,000 of capital funds. *Public Parks* (excluding parkways) received general improvements and extensions that required over \$33,000,000 of capital outlays. *Education* projects, for schools under the Board of Education and for colleges under the Board of Higher Education, consumed more than \$300,000,000 of city funds. *Dock* improvements, including ferries, slips, bulkheading and dock facilities, accounted for nearly \$87,000,000. (It was not possible to segregate outlays charged against Docks for bulkheading in connection with such projects as Highways, Parks, etc. Therefore, past expenditures for Docks include bulkhead costs for certain types of projects the costs of which are excluded from Docks under the Capital Program classifications.) *Protection* projects for the Fire, Police and Correction Departments, and Armories, required some \$26,300,000 of capital funds. *Health* improvements such as hospitals, clinics, welfare and health projects took over \$56,500,000 of capital expenditures. *Public Buildings and Miscellaneous* projects—markets, libraries, museums, court houses, administration buildings and miscellaneous projects not elsewhere included—accounted for more than \$102,000,000 of capital funds. *Rapid Transit* expenditures, aggregating over \$640,000,000, were more than double the amounts expended for Education and by far the largest for any of the ten groups shown in Table 44.

PAST EXPENDITURES AND THE RECOMMENDED CAPITAL PROGRAM

Since the figures for past expenditures cover a *thirteen*-year period and the capital program *eighteen* years, the aggregate amounts cannot be readily compared. Annual average expenditures and the ratio of outlay for each group to the total for all groups, as well as per capita figures, furnish useful bases for comparison.

The figures in Table 44 show that past outlays have been subject to considerable fluctuations from year to year, due no doubt to the lack of an orderly program and in part to changes in economic conditions. The past annual average expenditures, therefore, have little relation to actual amounts spent during a given year, but they do furnish a statistical basis for comparative purposes.

Past Averages and Ratios—The annual average amounts expended for each major purpose and the ratio of such expenditures to total outlays during the period 1924-36 inclusive, are shown in Table 45.

Future Averages and Ratios—The yearly average of expenditures recommended for the various types of capital improvements does not, of course, reveal the actual amounts suggested for each year nor during a 6-year period. The figures in Table 45 simply give the average yearly outlays that would be expended over an eighteen-year period under the recommended program summarized in Table 43.

Highways

Past outlays averaged nearly 1.9 million dollars per year and were equivalent to 1.7 percent of total capital expenditures. Recommended outlays would average about 3.7 million dollars per year and account for 3.6 percent of the total future capital expenditures. Table 45.

Thus suggested outlays would not only be about double the past amounts expended for highways but over twice the past ratio. This relative increase in highway outlays seems justified, however, on the basis of the city's pressing need for a comprehensive arterial highway system. The estimated costs of proposed routes that involve bulkheading include such work in total costs, while in the figures for the past years bulkheading expenses appeared under Docks. But the actual increase in future outlays that will be due to bulkheads accounts for only a fraction of the aggregate amount recommended for highways.

TABLE 44
Past Expenditures for Permanent Improvements
Based on Analyses of Comptroller's Reports
—Outlays from Corporate Stock, Serial Bond, Tax Notes and Special Funds—
(Figures in Millions of Dollars)

Year	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	Totals
Highways	3.68	2.22	1.75	0.48	0.84	1.70	4.49	5.45	1.88	0.48	0.10	0.86	0.45	24.38
Water Supply	17.77	9.59	7.91	8.02	6.54	10.27	19.94	29.72	10.01	2.62	4.19	4.16	2.92	133.66
Sani- tation	2.49	1.73	0.84	1.22	1.38	0.76	0.52	0.18	0.21	0.67	4.22	1.49	3.86	19.57
Public Parks	1.74	1.25	1.19	1.47	5.78	4.46	3.68	5.08	2.37	0.28	1.31	1.60	2.80	33.01
Educa- tion	57.97	44.20	19.39	17.48	24.81	40.53	33.70	22.81	12.14	4.14	1.68	7.83	18.41	305.09
Docks	2.07	10.77	4.30	21.09	5.60	6.81	11.39	5.04	5.99	2.14	0.87	5.68	5.14	86.89
Pro- tection	1.34	1.78	1.35	1.18	1.33	1.72	3.80	6.51	4.99	0.75	0.43	0.66	0.49	26.33
Health	0.82	3.39	3.70	3.74	3.96	4.65	4.45	10.15	7.99	3.95	1.19	1.74	6.80	56.53
Public Bldgs. etc.	7.24	14.29	9.54	16.91	7.84	7.82	8.56	9.19	6.57	2.45	3.87	4.09	3.60	101.97
Rapid Transit	8.18	18.57	50.88	64.56	78.31	83.99	101.38	93.49	55.59	26.69	10.38	13.61	35.13	640.76
Total Capital	103.30	107.79	100.85	136.15	136.39	162.71	191.91	187.62	107.74	44.17	28.24	41.72	79.60	1,428.19
Repav- ing	6.99	8.83	6.35	2.08	0.65	0.86	0.80	0.37	2.26	4.01	4.72	4.89	3.48	46.29
Local Sewers & Bridges— Boro. Pres.	0.06	0.05	0.16	0.21	0.36	0.21	0.53	0.70	0.39	0.13	0.006	0.001	0.03	2.837
Grand Total	110.35	116.67	107.36	138.44	137.40	163.78	193.24	188.69	110.39	48.31	32.966	46.611	83.11	1,477.317

Water Supply

Past outlays at 10.2 million dollars per year would be approximately 40 percent lower than the average of 17.26 million dollars per year suggested for Water Supply during 1939-56. While past outlays averaged 9.4 percent of total capital expenditures, the recommended outlay would take

16.7 percent of the total funds under the capital program. Table 45.

The major costs of the Catskill Water Supply were financed prior to 1924 so that the expenditures during 1924-36 did not provide for any considerable quantity of additional water. The recommended program on the other hand would

allow not only for normal improvements to the distribution system, but universal metering and the first two stages of the new Delaware water supply project. It is not suprising, therefore, to find that the funds recommended to be expended would be almost 1.7 times the past average.

Sanitation

During 1924-36, an average of 1.5 million dollars per year, or 1.4 percent of total capital outlays, was expended upon Sanitation projects. Under the recommended program the 5.8 million dollars annual average outlay is 3.8 times the past average and amounts to 5.7 percent of the eighteen-year capital program. Table 45.

Such increases are necessary, however, if the city is to handle its disposal problems by means of the incinerators and sewage treatment plants required to meet present deficiencies and the needs of the expected future population.

Public Parks

Past outlays for Parks averaged 2.5 million dollars per year, which was 2.3 percent of capital funds expended during 1924-36. The suggested 2.66 million dollars annual average expenditure would, therefore, represent a relatively small increase, and would be 2.6 percent of the recommended capital program. Table 45.

This comparison indicates that the suggested Park improvements are certainly not excessive in

the light of past outlays. (For an investigation of the probable affect of suggested assessable Park improvements upon the city's resources see the chapter on Recommended Assessable Improvement Program.)

Education

The provision of educational facilities took a very considerable sum, more than 23 million dollars per year or 21.4 percent of total capital expenditures, during the thirteen years 1924-36, inclusive. Future outlays would be practically the same, nearly 22.3 million dollars per year or 21.5 percent of the recommended capital program.

Despite the continued decline expected in public school registration, the pressing need for replacement and relocation of obsolete schools will require expenditures on the average nearly equal to outlays made during the years 1924-36, when total registration was increasing.

Docks

Past expenditures under this group, averaging almost 6.7 million dollars per year or 6.1 percent of total capital outlays, included ferries, slips, bulkheading, dock facilities, etc. Future outlays, at 3.6 million dollars per year or 3.5 percent of the capital program, are predicated upon decreasing ferry needs due to new bridges and tunnels now building and recommended, as well as less extensive outlays for bulkheading. Hence the recom-

TABLE 45
Past and Recommended Capital Expenditures
(Figures in Thousands of Dollars)

Functional Group	Past Outlays during the 13-Year Period, 1924-36		Future Outlays Suggested for 18-Year Period, 1939-56	
	Annual Average	Ratio	Annual Average	Ratio
Highways	1,881	1.7%	3,694	3.6%
Water Supply	10,286	9.4%	17,260	16.7%
Sanitation	1,510	1.4%	5,852	5.7%
Public Parks	2,543	2.3%	2,667	2.6%
Education	23,474	21.4%	22,271	21.5%
Docks	6,690	6.1%	3,661	3.5%
Protection	2,029	1.8%	2,498	2.4%
Health	4,353	4.0%	5,247	5.0%
Public Bldgs. & Misc.	7,849	7.1%	7,288	7.0%
Rapid Transit	49,294	44.8%	33,144	32.0%
Totals	109,909	100.0%	103,582	100.0%

mended program, intended to cover the more pressing needs for dock facilities, would be expected to call for less outlays.

Protection

Table 45 reveals that approximately 2 million dollars per year, or 1.8 percent of total capital outlays, was expended upon projects in this group. The capital program annual average would represent an increase of about one-half million dollars per year bringing expenditures to 2.4 percent of the total recommended program. While this allowance is not large it will probably about cover the more necessary projects required by the city's expected growth.

Health

During the thirteen years 1924-36, inclusive, some 4.3 million dollars was the average yearly outlay for Health projects. This amounted to 4 percent of total outlays for the thirteen years.

Future expenditures would average about 5.25 million dollars per year or 5 percent of total capital outlays recommended for the eighteen-year period, 1939-56. Table 45. This modest rise in expenditures for health, hospitals and welfare projects will apparently take care of only the more urgent needs of the city.

Public Buildings and Miscellaneous

Table 45 reveals that improvements of this type accounted for 7.1 percent of total capital outlays during the past and averaged over 7.8 million dollars per year.

The recommended capital program provides an average allowance of approximately 7.3 million dollars per year, which is considered sufficient to provide for the most desirable and necessary projects. This amount is about 93 percent of past outlays and would account for 7 percent of the total

capital expenditures recommended for the years 1939-56, inclusive.

Rapid Transit

During the thirteen years, 1924-36, expenditures for Transit averaged nearly 50 million dollars per year and accounted for almost 45 percent of the total outlays. These transit outlays were more than double the amounts expended on Education projects and almost five times the expenditures for Water Supply, the two groups that took second and third place, respectively, in the order of the amounts expended.

Table 45 shows that future outlays would average approximately 33 million dollars per year, or 32 percent of total expenditures recommended for the eighteen years 1939-56. While this program represents 67 percent of past expenditures it should be recalled that it would provide for only a few selected transit improvements. The funds set up in the capital program would still be nearly one-third more than Education allowances and almost double the expenditures recommended for Water Supply. However, the capital program does not include the probable costs to the city of rapid transit unification.

Total Capital Expenditures

Table 45 indicates that an average of 109.9 million dollars per year was expended during 1924-36 for all improvements classified herein as capital projects. The staff estimates that these outlays were equivalent to an average of \$16.22 per capita per year for the thirteen-year period.

Total capital expenditures recommended for the eighteen years 1939-56, would be slightly less than past outlays, averaging about 103.5 million dollars per year. On the basis of the expected increase in population, however, the recommended program, averaging \$12.48 per capita per year, would be about 24 percent below the past annual average per capita expenditure.

Recommended Assessable Improvement Program

This chapter considers the effect of the suggested program of expenditures from the assessable improvement funds upon the city's indicated assessable sources. The finance study revealed that expenditures for assessable improvements aggregating \$785,463,000 for the eighteen years 1939 to 1956 inclusive, would not be unreasonable in the

light of past experience and the city's expected growth. While the staff did not recommend that this total amount of assessable improvements should be undertaken, it will be of interest to compare the expenditures suggested in the recommended assessable improvement program with the \$785,463,000 which was indicated as the assessable resources of the city during 1939 to 1956.

Recommended Assessable Highway Improvements
(Figures in Thousands of Dollars)

Period	1939-44	1945-50	1951-56	18-Year Total
Land Acquisition	66,900	59,840	30,950	157,690
Construction	25,377	22,004	23,196	70,577
Total	92,277	81,844	54,146	228,267

IMPROVEMENTS RECOMMENDED TO BE ASSESSABLE

In the preceding sections of this report that portion of the costs of desirable permanent improvements which might be paid from the proceeds of the street and park openings fund and the street improvement fund were segregated from outlays that must be provided in the capital program. As a result of this analysis it is apparent that under the charter only three types of improve-

Sanitation Projects

The program for construction of sewage disposal plants and intercepting sewers, recommended for the three 6-year periods commencing in 1939, contains expenditures in the amount of \$83,250,000 from the assessable improvement funds. See Table 30. In the sanitation study the total costs of sewage disposal works was presumed to include land acquisition, and in its schedules of assessable

Recommended Assessable Sanitation Improvements
(Figures in Thousands of Dollars)

Period	1939-44	1945-50	1951-56	18-Year Total
Land Acquisition	2,775	2,775	2,775	8,325
Construction	24,975	24,975	24,975	74,925
Total	27,750	27,750	27,750	83,250

ments, covered by the Mayor's Committee city-wide studies, can be financed by assessments, namely: highway, park, and sanitation projects. The probable cost of opening, constructing or widening of local streets, the installing of local sewers, sidewalks, curbs, etc., the fencing of vacant lots and the filling of sunken plots—which may be authorized by law to be paid by special assessment—were not included in the general studies undertaken by the Mayor's Committee staff.

Highway Projects

The recommended program of highway outlays includes \$228,267,000 of expenditures from assessable improvement funds, arranged by 6-year periods, as shown below for the eighteen years 1939-56, inclusive. (Also see Table 38.)

For the first period assessable expenditures would total \$92,277,000; during the six years 1945-50, scheduled expenditures would total \$81,844,000; and the third 6-year program calls for outlays aggregating \$54,146,000.

improvements the staff assumed that ten percent of the recommended expenditures will be required for land acquisition and the balance for construction.

The above tabulation, therefore, shows expenditures in the amount of \$27,750,000 for each of the three 6-year periods, of which ten percent or \$2,775,000 is scheduled for land and \$24,975,000 for construction.

Park Projects

In order to obtain the additional playgrounds, athletic fields, and small and large parks indicated as desirable to meet the needs of the expected population, the staff recommended that estimated expenditures be spread about equally over thirty-two years. It was suggested that the expenses of land acquisition for new recreation areas be paid from the proceeds of the street and park openings fund, and that a small part of the development costs also be met by assessments as shown below.

Recommended Assessable Park Improvements
(Figures in Thousands of Dollars)

Period	1939-44	1945-50	1951-56	18-Year Total
Land Acquisition	67,890	67,890	67,890	203,670
Improvements	4,190	5,720	7,250	17,160
Total	72,080	73,610	75,140	220,830

The recommended program of assessable improvements includes expenditures of \$203,670,000 for new park sites and \$17,160,000 for permanent improvements during the eighteen years 1939-56, inclusive. The \$67,890,000 of outlays scheduled for land acquisition remain the same during each 6-year period, but expenditures for development increase from \$4,190,000 the first period to \$5,720,000 the second, and to \$7,250,000 during the six years 1951-56.

RELATION OF PROGRAM TO ASSESSABLE RESOURCES

The finance study report revealed that land acquisition accounted for 52.1 percent, highways 24.5 percent, sewers 23.3 percent and miscellaneous purposes 0.1 percent of total assessments confirmed during 1929-36, inclusive. In estimating the probable extent of expenditures that could be made

from assessable funds, it was supposed in the finance study that future expenditures would be equivalent to the amounts of assessments confirmed. In analyzing the effect of recommended expenditures upon total assessable resources, it was also assumed that the amount of outlays that will probably be available for each of these purposes in the future would bear the same ratios to total expenditures from the two assessable improvement funds as the past average ratio of assessments confirmed for each purpose bore to total assessments confirmed.

The amounts indicated in Table 46 as "Resources" for land acquisition, parks and highways, sewers and disposal plants, and miscellaneous projects were determined on the basis of these past ratios of assessments confirmed, considered as assessable outlays for each purpose to total assessable expenditures. Since expenses for park improvements do not appear in available reports,

TABLE 46
Assessable Improvement Program and The City's Assessable Resources
(Figures in Thousands of Dollars)

Period	Total Assessable	Land Acquisition	Parks & Highways	Sewers & Plants	Misc. Projects
<i>1939-44</i>					
Resources *	246,922	128,646	60,496	57,533	247
Program	192,107	137,565	29,567	24,975	.....
Balance	54,815	—8,919	30,929	32,558	247
% Program of "Resources"	77.80%	106.93%	48.87%	43.41%	.....
<i>1945-50</i>					
Resources *	267,560	139,399	65,552	62,341	268
Program	182,844	130,145	27,724	24,975	.....
Balance	84,716	9,254	37,828	37,366	268
% Program of "Resources"	68.34%	93.36%	42.29%	40.06%	.....
<i>1951-56</i>					
Resources *	270,981	141,181	66,390	63,139	271
Program	157,036	101,615	30,446	24,975	.....
Balance	113,945	39,566	35,944	38,164	271
% Program of "Resources"	57.95%	71.97%	45.86%	39.56%	.....
<i>18-Year Totals</i>					
Resources	785,463	409,226	192,438	183,013	786
Program	531,987	369,325	87,737	74,925	.....
Balance	253,476	39,901	104,701	108,088	786
% Program of "Resources"	67.73%	90.25%	45.59%	40.94%	.....

* See Assessable Improvement Section of Finance Study report.

recommended expenditures for park development were combined with highways in Table 46.

Total Assessable Resources

The totals of recommended assessable outlays, tabulated above by purposes, appear in Table 46 opposite the caption "Program". Reference to this table will reveal that of the assessable "Resources" \$192,107,000 or 77.8 percent would be expended during the first 6-year period under the improvement program recommended by the Mayor's Committee staff, leaving a balance of \$54,815,000. In the six years 1945-50, the program calls for outlays of \$182,844,000 or 68.3 percent of "Resources", leaving a balance of \$84,716,000. During the third 6-year period \$157,036,000 or 57.9 percent of "Resources" would be expended, leaving a balance of \$113,945,000. These expenditures, aggregating \$531,987,000 during the entire eighteen years, would account for 67.7 percent of "Resources" and would leave \$253,476,000 for the various types of local projects that were not covered by the city-wide studies made for the Mayor's Committee, but which may be expected to account for a portion of future assessable expenditures.

Land Acquisition

Past experience suggests that 52.1 percent of future assessable "Resources" will probably be spent for land acquisition. On this basis \$128,646,000 would be available during the first 6-year period, \$139,399,000 in the second period, and \$141,181,000 during the third 6-year period; a total of \$409,226,000 for land acquisition during the eighteen years.

Estimated expenditures for land acquisition, scheduled to be paid from assessable funds, for highways, parks and sewage disposal are given in Table 46 under "Land Acquisition". In the first 6-year period \$137,565,000 or 106.9 percent of "Resources" assumed to be available for land would be spent under the recommended program; during 1945-50, \$130,145,000 or 93.3 percent would be expended; and \$101,615,000 or about 72 percent of "Resources" would be needed during the third 6-year period. Over the eighteen years 90.25 percent of assessable "Resources" assumed to be available for land acquisition would be expended under this program, leaving a balance of \$39,901,000 to cover costs of acquiring title to new local streets or for the widening of such existing streets as were not included in the Highway study.

It would appear that the relatively small balances of "Resources" remaining after the recommended expenditures will be sufficient to cover the costs of taking title to land for new local streets and for street widenings, the probable costs of which were not estimated in these studies. The highway report pointed out that approximately 20 percent of the city's area is still inaccessible by public streets, but the Residential study revealed that a large portion of these areas need not be developed since they will not be required to house the city's ultimate population. Therefore, it is believed that the relatively small balances of "Resources" that would remain after meeting the requirements of the recommended program will more than cover the probable needs for such expenditures.

Further, the city could take title to many sites in suitable locations for small parks, playgrounds, etc., through foreclosure proceedings on properties that have been tax delinquent for a number of years and are almost entirely vacant or unused land. Such a policy properly pursued, offers unusual opportunities to acquire land for some of the desirable parks at savings to the city, and it would reduce to that extent the expenditures for new park sites scheduled in the recommended program.

Parks and Highways

Available reports of past expenditures from assessable funds do not show outlays for park improvements. Hence, the costs of the recommended program for park development are lumped with expenses for highway construction in Table 46. The resulting schedules call for outlays of \$29,567,000 or 48.8 percent of the assessable "Resources" expected to be available for highway and park construction during the first 6-year period; \$27,724,000 or 42.2 percent for the second period; and \$30,446,000 or 45.8 percent of "Resources" for the third 6-year period. Over the entire eighteen years, recommended expenditures would total \$87,737,000 or 45.5 percent of the funds assumed to be available for such purposes, leaving a balance of \$104,701,000 for improvement of local streets, widenings, etc.

Inasmuch as the number of new streets to be opened and improved is expected to decline in the future, it appears that this balance of assessable funds will be sufficient for improvements to local streets.

Sewers and Disposal Plants

The recommended expenditures for sewage disposal plants, scheduled to be paid from the proceeds of the street improvement fund, are also given in Table 46. Reference to this table will show that such outlays would account for 43.4 percent of "Resources" expected to be available for such assessable outlays in the six years, 1939-1944; only 40 percent during the second 6-year period; 39.5 percent for the six years 1951-56; and 40.9 percent during the entire eighteen years.

The balances available for local sewers, for which the needs were not determined in the staff's city-wide studies (\$32,558,000 in the first period, \$37,366,000 in the second, and \$38,164,000 during the third six-year period) are believed to be adequate to cover future requirements. Since the need for improvement of new streets is expected to diminish, the amounts of future outlays required for extension of new local sewers should also decline.

Miscellaneous Projects

Table 46 also contains a column headed "Miscellaneous Projects"; such past outlays cover assessable projects not elsewhere classified. None of the assessable expenditures scheduled under the recommended improvement program fall within this category, and therefore, the entire amounts of "Resources" would be available for such miscellaneous local projects in the future.

Conclusions

Although some 67.7 percent of assessable "Resources" expected to be available would be expended under the recommended assessable program, this study suggests that sufficient balances would remain thereafter to cover the necessary expenses for the several types of local assessable improvements not studied by the Mayor's Committee staff. In general, therefore, the recommended assessable program appears to be within the city's assessable resources.

